

Golden Gate National Recreation Area

National Park Service
U.S. Department of the Interior

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Mori Point Restoration and Trail Plan

Environmental Assessment

February 2006



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Environmental Assessment

Mori Point Restoration and Trail Plan

Prepared by:

Golden Gate National Recreation Area

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Mori Point Restoration and Trail Plan Summary

The National Park Service (NPS) has prepared an Environmental Assessment (EA) that describes and analyzes alternatives for habitat restoration and development of a safe and sustainable trail system at Mori Point, a unit of the Golden Gate National Recreation Area (GGNRA) in Pacifica, CA. The EA presents and analyzes one No Action and three Action Alternatives. The Action Alternatives each contain a restoration, trail alignment, and trail use designation component.

Proposed restoration activities include actions such as protection of the federally protected San Francisco garter snake and California red-legged frog; removal of placed fills, trash, and debris; installation of site improvements; ensuring visitor access without compromising slope stability or sensitive habitat; improving hydrologic and habitat connectivity between upland and wetland areas; creation of up to five seasonal ponds for San Francisco garter snake foraging habitat; and reduction and repair of coastal erosion. Long-term stewardship actions include trail maintenance, restoration of native plant communities; development and implementation of a monitoring system to track progress for restoration goals; and public education.

Proposed trail alignments were developed around sensitive habitat and as a result of public input and trail use studies. The alternatives are as follows:

Alternative 1: Preferred Alternative

This alternative includes the above restoration and trail alignment components. Hiker-only designations would be in effect on all segments through, or leading to, steep and erosion-prone areas. Multiple-use opportunities (hiking, bicycling, and equestrian uses) were identified on the California Coastal Trail (CCT) and its main connector routes.

Alternative 2: Limited Multiple-use

Under this alternative, the same restoration and trail alignment would occur as with the Preferred Alternative, but only Mori Road, the California Coastal Trail, and California Coastal Trail Connector near the “bowl” area are designated for multiple-use. All other trails would be hiker-only.

Alternative 3: All Multiple-Use

In addition to the restoration and trail alignment described in the Preferred Alternative, all trails would be designated multiple-use, with no restrictions on biking, hiking, or equestrian use.

Alternative 4: No Action

Under this alternative, the GGNRA would continue with the limited restoration activities currently authorized by the U.S. Fish and Wildlife Service. No additional restoration, trail alignments, or use designation would occur.

As part of the proposed project, the NPS has developed and incorporated measures that will avoid, minimize, or mitigate for potential environmental impacts. The Preferred Alternative best meets the NPS management objectives related to natural resource protection and public access, including the restoration of the property’s endangered species habitat and provision of a variety

of experiences for park users. Minor modifications of the proposed mitigation measures and project description may occur upon receipt of the Biological Opinion.

There will be a 30-day comment period on the EA, which is available for review online at <http://parkplanning.nps.gov/goga> and at local libraries. Comments may be submitted electronically via the project website or in writing to:

Superintendent, Golden Gate National Recreation Area
ATTN: Mori Point/Division of Planning and Technical Services
Fort Mason, Building 201
San Francisco, CA 94123

For more information on the project or to obtain a CD or hard copy of the EA, send an email to moripointea@parksconservancy.org or contact Jen Greene at (415) 561-3086.

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CHAPTER 1. PURPOSE AND NEED

1.1 Introduction

The National Park Service (NPS), in coordination with the Golden Gate National Parks Conservancy (GGNPC), is considering a management strategy for Mori Point, which is located in Pacifica, San Mateo County, on land owned and managed by the Golden Gate National Recreation Area (GGNRA) (Figure 1). Mori Point is rich in natural resources, adjacent to open space, and ideally situated to provide key links to NPS lands at Sweeney and Milagra Ridges and other recreational opportunities along the San Mateo Coast.

Because the NPS recently acquired the land, Mori Point is not specifically included in any NPS or GGNRA general planning documents. A plan is needed to ensure that all uses at Mori Point are compatible and enhance both natural and visitor resources at the site. The GGNRA is proposing to improve visitor access at the 110-acre Mori Point property by implementing restoration actions including a trail system that minimizes impacts to NPS resources and enhances recreational experiences.

This environmental assessment (EA) evaluates a No Action Alternative and three Action Alternatives and analyzes the impacts of each on the environment. The Action Alternatives analyzed are: Alternative 1, Preferred Alternative; Alternative 2, Limited Multiple-use; and Alternative 3, All Multiple-use. This document also includes discussions of alternatives that have been dismissed and the rationale for their elimination. The EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and Council on Environmental Quality (40 CFR 1508.9), and the NPS Director's Order (DO) 12, Conservation Planning, Environmental Impact Analysis, and Decision Making, and the National Historic Preservation Act, as amended (NHPA).

1.2 Background

Mori Point was originally part of the San Pedro Spanish Land Grant and has been the site of many enterprises over the past 120 years. The Mori family, for whom the land is now named, settled in Pacifica in the 1890's and developed a farm on Mori Point. The Mori family business included the Mori Point Tavern, which operated on the site from the 1920's to 1966 when it burned to the ground in a fire. Part of Mori Point was also used as a rock quarry and the remains of sand dredging operations are still visible.

For the past 30 years, the property at Mori Point has been threatened with development. The local community, local government, and other organizations fought to protect the area and in 2002, the Trust for Public Land outbid developers at a public auction and purchased the property. Despite being privately owned, Mori Point has historically been used by the community as an urban park for hiking, bicycling, horseback riding, and dog walking. Historic land uses such as quarrying operations, in combination with other uses related to motorbike and off-road vehicles, have resulted in an altered and eroded landscape with a large network of non-designated trails. Soon after, the NPS used funds from the California Coastal Conservancy and the federal Land and Water Conservation Fund to add the 110-acre property to the GGNRA.

FIGURE 1. MORI POINT PROJECT REGIONAL LOCATION MAP



This planning effort was initiated by a grant received in 2004 from the California Coastal Conservancy to identify the optimal alignment for the California Coastal Trail through Mori Point. The grant stipulates that the planning effort would also identify secondary trails linking Mori Point to local communities and formulate measures to protect, restore, and enhance sensitive habitats and the species they support at Mori Point. Over the past year, the NPS in cooperation with the GGNPC, has gathered detailed baseline information on Mori Point's endangered species habitats, vegetation communities, invasive species locations, hydrological conditions, trail alignments, cultural resources, and recreational uses in order to develop restoration strategies, including trail alignment alternatives that address stakeholder concerns.

Creation of a continuous coastal trail was originally proposed as part of visionary legislation passed by California voters and the state legislature in the 1970s that also created State agencies to both nurture and protect the fragile and beautiful coastal environment and guarantee public access to the shoreline. The Coastal Act of 1976 required local jurisdictions to identify an alignment for the California Coastal Trail in their Local Coastal Programs. In 1972, Proposition 20 provided that, "A hiking, bicycle, and equestrian trails system shall be established along or near the coast" and that "ideally the trails system should be continuous and located near the shoreline." In 1999 and 2000 the California Coastal Trail was nominated and then designated as California's Millennium Legacy Trail by Governor Davis and the White House Millennium Trail Council. Also in 2001, the State Senate passed legislation, SB908 (Chesbro) that directed the California Coastal Conservancy in cooperation with the Coastal Commission and State Parks Department, to submit to the Legislature a plan that describes how the Coastal Trail may be completed by 2008.

1.3 Purpose and Need

1.3.1 Purpose of Taking Action

The purpose of the project is to develop a management strategy for Mori Point that meets the following goals:

- protect and enhance habitat for the federally endangered San Francisco garter snake and the federally threatened California red-legged frog;
- preserve and restore the ecological integrity of Mori Point habitats by reducing threats to native plant communities and natural processes; and
- develop a safe and sustainable trail system, incorporating the California Coastal Trail that improves recreational experiences and reduces impacts to park resources.

1.3.2 Need for Action

Past land use activities at Mori Point have resulted in accelerated erosion along the western bluffs and interior drainages, and alterations in the region's natural topography and hydrology; all of which impact natural processes, resource protection, visitor safety, public access, and visual aesthetics. The lack of a management plan at Mori Point exacerbates these conditions. Unless action is immediately taken, damage to resources would continue, increase, and worsen.

A plan is needed to protect and enhance habitat for the federally listed species at the site and develop a logical, safe, and sustainable trail system throughout Mori Point that would best provide for all visitor use, while preserving and restoring the ecological integrity of Mori Point habitats, native plant communities and natural processes. To this end, a well-defined, sustainable trail system is needed to sustainably guide visitor use and to prevent continued degradation of sensitive natural resources at the site. The ability to direct visitor use on to a defined trail system allows for the disturbed areas and potential endangered species habitat outside of the trail network to be restored and protected.

Action is being undertaken now because grant funds were received from the California Coastal Conservancy to formally designate the California Coastal Trail and secondary trail links on and through Mori Point consistent with California Coastal Trail and NPS management objectives to restore, enhance, and protect sensitive natural resources that exist at the site. Specifically, the project is needed to:

Protect and enhance habitat for the federally endangered San Francisco garter snake and the federally threatened California red-legged frog at Mori Point. As per the Endangered Species Act of 1973 (ESA), the NPS is obligated to “conserve the ecosystems upon which endangered or threatened species depend” and to conserve and recover listed species.

Preserve and restore the ecological integrity of Mori Point habitats by reducing threats to native plant communities and natural processes. This project would restore the ecological integrity of Mori Point habitats by removing impacts to habitat, improving hydrology and habitat connectivity, repairing erosion, and restoring native vegetation and wetland communities at the site.

Develop a safe and sustainable trail system, incorporating the California Coastal Trail, that improves recreational experiences and reduces impacts to park resources. The California Coastal Conservancy grant stipulates that the planning effort would also identify secondary trails linking Mori Point to local communities. The trail system incorporates popular destination points and existing trails, creation of multiple loop routes, and inclusion of several alternatives for north-south and east-west connector trails. An essential component of the new trail network is trail-use designation. Planned visitor use on formalized trails would reduce impacts to natural resources of the site.

1.4 Project Objectives

Described below are the management objectives guiding this effort.

- Protect and enhance habitat for the federally endangered San Francisco garter snake and the federally threatened California red-legged frog.
- Restore native California plant communities including an appropriate mix of wetland, coastal grassland, and coastal scrub to support the threatened and endangered species at

the site.

- Remove placed fills (non-native sand/gravel/rock, asphalt, cement, clay) as appropriate. Remove trash, debris, and illegal structures after assessing San Francisco garter snake habitat value. Replace structures with functional habitat equivalent as appropriate.
- Implement a comprehensive trail plan that would protect and enhance native habitats as well as provide safe visitor access.
- Install site improvements.
- Ensure access through site without compromising slope stability or sensitive habitat.
- Improve hydrologic and habitat connectivity between upland and wetland areas.
- Create ponds for San Francisco garter snake foraging habitat.
- Reduce human-caused and accelerated erosion to restore natural processes.
- Develop and implement a monitoring system to track progress for restoration goals.
- Engage community in the implementation of management objectives.
- Build public awareness on the appropriate use of the site, and protect habitat from unauthorized and/or destructive use.
- Build public awareness on the unique values and recreational opportunities at Mori Point.

1.5 Project Area Location

The project area is located at Mori Point in the City of Pacifica along the Pacific Coast, west of Highway 1 and south of Laguna Salada (Figure 1).

1.6 Scope of Environmental Assessment

This EA analyzes three Action Alternatives and the No Action Alternative and their impacts on the human and natural environment. It fully describes project alternatives, existing conditions in the project area, and equally analyzes the effects of each project alternative on the environment.

This EA was prepared pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4341 et seq.), as amended in 1975 by P.L. 94-52 and P.L. 94-83. Additional guidance includes NPS Director's Order 12 (NPS, 2001a) which implements Section 102(2) of NEPA and the regulations established by the Council on Environmental Quality (CEQ) (40 CFR 1500-1508). The project must comply with requirements of NEPA as well as other legislation that governs land use, natural resource protection, and other policy issues within GGNRA.

This EA will also serve as a Biological Assessment (BA) pursuant to the Endangered Species Act of 1973 (ESA). The ESA states that, if a federal action may adversely affect a federally listed species, consultation with the U.S. Fish and Wildlife Service (USFWS) is required to ensure that the action will not jeopardize the species' continued existence or result in the destruction or adverse modification of critical habitat. This BA serves to initiate formal consultation with the USFWS. Its purpose is to identify any endangered species or threatened species which are likely to be affected by the project and help make the determination of whether the proposed action is "likely to adversely affect" listed species and critical habitat. For the purpose of consultation with the USFWS, the NPS property boundary at Mori Point is also considered to be the "action area" (areas to be affected by the Federal action) and the NPS is considered to be the "action agency".

The following related topics are outside the scope of this EA. The GGNRA intends to conduct separate planning for these projects.

- Habitat enhancement and re-introduction of the federally endangered Myrtle's Silverspot Butterfly. This species historically occurred in grassland habitats around Pacifica, but now is considered to be extinct south of the Golden Gate Bridge. Habitat restoration and species re-introduction efforts may be pursued in the future in coordination with USFWS under a separate planning and compliance process.¹
- Dog walking. Dog walking on site will be evaluated through an ongoing federally-sanctioned Negotiated Rulemaking Process. More information on this planning process can be found at www.nps.gov/goga and <http://parkplanning.nps.gov/goga>.
- Planning or construction of connector trails outside the project area, including potential future trail to Sweeney Ridge. These efforts will be addressed in the future under separate planning efforts and compliance documentation.

1.7 Related Laws, Legislation, Management Guidelines and Constraints

Many regulations and Executive Orders are typically addressed in NEPA documents. The following is a summary of several relevant guidance documents and regulations and a description of their relationship to the Proposed Project. Other applicable regulations, plans, and standards that were taken into consideration in the development of this EA and the analysis of the impacts are located in Chapter 3.

National Park Service Organic Act

The NPS Organic Act directs the NPS to manage units "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner as will leave them unimpaired for the enjoyment of future generations." (16 U.S.C. § 1). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that the NPS must conduct its actions in a manner that will ensure no "derogation of the

¹ This species was not considered to be present within the Project Area per the impact analysis in Section 3.5.2.1 and Appendix A.

values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.” (16 U.S.C. § 1 a-1). The Organic Act prohibits actions that permanently impair park resources unless a law directly and specifically allows for the acts. An action constitutes an impairment when its impacts “harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources and values.” (Management Policies 1.4.3).

National Park Service Management Policies (2001)

NPS Management Policies 2001 requires the analysis of potential effects of each alternative to determine if actions would impair park resources. To determine impairment, the NPS must evaluate “the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts.” (Management Policies 1.4.4). The NPS must always seek ways to avoid or minimize, to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give the NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment to the affected resources and values (Management Policies 1.4.3).

1980 General Management Plan for the Golden Gate National Recreation Area (GMP)

The GMP (NPS, 1980), which is the guiding plan for the park, and its corresponding EA were reviewed in the development of this EA. Mori Point is not addressed in the 1980 GMP because it was not added to the GGNRA until 2002, subsequent to GMP development. However, relevant management objectives identified in the GMP that provide useful context include:

- To offer recreational opportunities to a diversity of park users and to impart knowledge necessary for full enjoyment of park resources through a particular emphasis on interpretation, education, and information programs;
- To retain opportunities for recreation activities pursued in the park today;
- Maintaining and restoring the character of natural environment lands by maintaining the diversity of native park plant and animal life, identifying and protecting threatened and endangered plant and animal species, and other sensitive natural resources, controlling exotic plants, and checking erosion whenever feasible; and
- To recognize the importance of the cultural resources within the recreation area through a positive program of their identification, evaluation, preservation, management, and interpretation.

36 CFR 4.30, Federal Register, Vol. 52, No. 63 and Vol. 57, No. 239

These regulations specifically address bicycle use on NPS lands. Vol. 52, No. 63 states “Routes may only be designated for bicycle use based on a written determination that such use is consistent with the protection of a park area’s natural, scenic, and aesthetic values, safety considerations and management objectives and will not disturb wildlife or park resources.” Vol. 57, No. 239 states with regard to bicycle routes: “Any additional trails other than those mentioned in this preamble may be designated by the Superintendent in writing after holding public meetings through the Golden Gate Advisory Commission, by marking on maps which will be available in the office of the Superintendent and other places convenient to the public, and through the posting of trails which are open to bicycle use.” This EA serves as written

determination that bicycle use on Mori Road, California Coastal Trail (CCT,) CCT Bowl Connector, Fairway Trail, Upper Trail, and Bluff Trails, as described in the Preferred Alternative, is consistent with the park area's natural, scenic, and aesthetic values, safety considerations and management objectives and will not disturb wildlife or park resources.

1.8 Issues and Impact Topics

Issues are related to potential environmental effects of project alternatives and were identified by the project interdisciplinary team (comprised of NPS and GGNPC staff and natural resources consultants). Once issues were identified, they were used to help formulate the alternatives and mitigation measures. Impact topics based on substantive issues, environmental statutes, regulations, and executive orders (EOs) were selected for detailed analysis. A summary of the impact topics and rationale for their inclusion or dismissal is given below.

1.8.1 Issues and Impact Topics Identified for Further Analysis

Issues and concerns affecting the proposed project were identified through input from individuals, organizations, federal agencies, and NPS public scoping efforts. The Proposed Project was evaluated under the GGNRA's internal NEPA process (Project Review) which included internal scoping with staff. The NPS also conducted public scoping (see Chapter 4 for a description of the scoping process). The prominent issues raised are potential impacts to visitors using Mori Point, trail use designations, trail alignments, and impacts to federally protected species and other natural resources. In response to these issues, the following relevant impact topics are analyzed in the EA: Geology and Soils, Hydrology and Water Quality, Biological Resources, Cultural Resources, Public Safety, Air Quality, Visitor Use and Recreation, Noise, and Visual Resources.

1.8.2 Impact Topics Considered but Dismissed from Further Consideration

Rationale for dismissing specific topics from further consideration is given below.

Prime and Unique Farmlands

In August 1980, the Council on Environmental Quality (CEQ) directed that federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) as prime or unique. Prime or unique farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. According to NRCS, none of the soils in the project area are classified as prime and unique farmlands. Therefore, the topic of prime and unique farmlands was dismissed as an impact topic in this document.

Land Use

Mori Point is federal NPS property and therefore exempted from compliance with local policies and regulations. However, the NPS seeks to be a good neighbor and manage land in a manner supportive of local policies. The proposed action would neither change local and regional land use nor impact local businesses or other agencies. Additionally, implementation of the Action

Alternatives would not affect existing land uses within the GGNRA, regardless of trail alignment or designation. Mori Point will continue to be managed as NPS land consistent with the Organic Act of 1916 "...to promote and regulate the use of the...national parks...which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Environmental Justice

Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low income populations and communities. The actions proposed in this analysis would not have disproportionate health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Environmental Justice Guidance (1998). Any temporary restriction on trail use or trail realignments would be equally applied to all visitors, regardless of race or socioeconomic standing.

Energy Resources

This project would not place an increased burden on local or regional energy resources. The project is located on open space land and the proposed actions would not require long-term use of energy resources. Construction activities associated with the project would be undertaken in an energy efficient manner.

Museum Collection

Actions proposed in this would not have a direct or indirect effect on park museums collections.

Wilderness

There is no designated Wilderness within the project area.

Hazardous Materials

A Level 1 Pre-Acquisition Environmental Site Assessment Survey (Level 1 Survey) of Mori Point was completed in 2001. This Level 1 Survey included a site inspection on September 1, 2001; completion of a NPS Level 1 Survey Checklist for Proposed Real Estate Acquisitions; interviews with the previous property owner; and a review of government agency records and historical uses of the property. The survey revealed no evidence of recognized environmental conditions or contaminants on the property and there were no obvious signs of contamination. Therefore, hazardous materials was dismissed as an impact topic.

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CHAPTER 2. DESCRIPTION OF ALTERNATIVES

2.1 Introduction

NEPA requires federal agencies to conduct a careful, complete and analytic study of the impacts of proposals that have the potential to affect the environment and consider alternatives to that proposal, well before any decisions are made. Federal agencies are also required to involve interested or affected members of the public in the NEPA process. The EA assists the NPS in decision-making and in the determination that the potential for significant effect does not exist and the preparation of an environmental impact statement is not required. All alternatives are consistent with the legal requirements, established standards and guidelines for the management of natural and historic resources in accordance with the mission of the NPS.

2.2 Description of Alternatives

2.2.1 Background on Alternative Development

In order to acquire the baseline data needed to develop informed and appropriate alternatives for the Mori Point Restoration and Trail Plan, the GGNRA commissioned several studies. Study maps can be found in Appendix A and other locations noted below. These studies included:

- *Trail Use Study.* A trail use study was conducted to determine the most frequently used trail segments (Appendix A). Study results indicated that most visitors used Mori Road and the trails along the coastal cliffs near the Point. The Upper Trail south of Mori Road was also used relatively frequently. Visitors to the site were also interviewed by staff as to their trail and site preferences.
- *Vegetation Mapping.* Vegetation associations (Appendix A) and vegetation alliances (Figure 13) were mapped according to standards set forth by the NPS Inventory and Monitoring Program.
- *Invasive Plant Survey.* The locations of fifteen priority non-native plant species were mapped (Appendix A).
- *Hydrological Assessment.* Natural and manipulated drainage patterns (Appendix A), natural and artificial seeps, natural and manipulated landslides, and placed fill (Appendix A) were identified and mapped.
- *Trail Assessment.* All roads and non-designated trails were mapped (Figure 6).
- *Boundary Survey.* A boundary survey was conducted to identify and demarcate GGNRA boundaries at Mori Point (boundaries indicated on all Figures).
- *Topographical Survey.* Elevation contours at 0.5-meter intervals were mapped (Appendix A).
- *Special Status Species Occurrences.* San Francisco garter snake and California red-legged frog observations were compiled and mapped, along with historic information about both species' distributions. San Francisco fork-tail damselfly potential habitat was also mapped (Figure 16).
- *Wetland Mapping.* Wetlands throughout the project site were mapped according to Cowardin wetland classification system, according to NPS standards (Figure 15). A subset of these wetlands that would potentially be impacted by the proposed project were mapped in more detail, according to US Army Corps of Engineer protocols (Figure 14).

The GGNRA also conducted meetings and site visits with hydrological experts, endangered species experts, trail planners, U.S. Fish and Wildlife Service biologists, and the Pacifica Golden Gate National Recreation Area Liaison Committee to discuss potential plans for Mori Point. Based on the information and recommendations gathered, the GGNRA created a draft trail alignment and restoration plan for Mori Point, which was open for public comment from October 7, 2005 through November 7, 2005. The draft alignment and restoration plan was revised based upon public comment and developed into the Preferred Alternative (Alternative 1).

2.3 Alternatives Considered in Detail

2.3.1 Features Common to Action Alternatives

The guiding objectives of all Action Alternatives are to protect and enhance habitat for the endangered San Francisco garter snake and the threatened California red-legged frog; preserve and restore the ecological integrity of Mori Point habitats by reducing threats to native plant communities and natural processes; and develop a safe and sustainable trail system, incorporating the California Coastal Trail, that improves recreational experiences and reduces impacts to park resources (Figure 2 – General Plan).

Each of the three Action Alternatives contains the same restoration and trail alignment proposal and differs only in trail-use designation. These actions are similar across all alternatives due to the need to provide the highest level of protection for the federally listed species on the site. The resulting opportunities for trails leave one system that best responds to user circulation needs. All trails were evaluated for suitability for uses over and above hiker-only. The Preferred Alternative (Alternative 1) (Figure 3) offers a variety of trail experiences to different user groups and provides for the best way to meet management objectives to protect and enhance natural resource values and provide public access. In the Preferred Alternative, hiker-only designations would be in effect on all segments through, or leading to, steep and erosion-prone areas. Multiple-use opportunities were identified on the California Coastal Trail (CCT) and its main connector routes, Mori Road, Upper Trail, CCT Bowl Connector, and Fairway Trail. The second alternative (Limited Multiple-use) (Figure 4) proposes that only the CCT be designated multiple-use, and that all other alignments be considered hiker only. In the third alternative (All Multiple-use) (Figure 5), all trails are designated multiple-use, with no restrictions on biking, hiking, or equestrian use. The fourth alternative is the No Action alternative (Figure 6). Dog walking will be determined through an ongoing federally-sanctioned Negotiated Rulemaking Process, and is not addressed in this document (see Section 2.4).

Actions common to all alternatives are divided into two categories: 1) Site-wide Management Actions and 2) Long-term Stewardship Actions. Site-wide Management Actions would be finite actions that occur for a discrete period of time over the course of the project. These Site Management Actions also includes restoration in specific areas, called Special Restoration Areas. Site-wide Management actions would occur throughout the entire site, with the exception of those concentrated in Special Restoration Areas. Long-term Stewardship Actions would occur in perpetuity on a regular basis. A description of these actions is described below.

FIGURE 2. MORI POINT GENERAL RESTORATION AND TRAIL PLAN

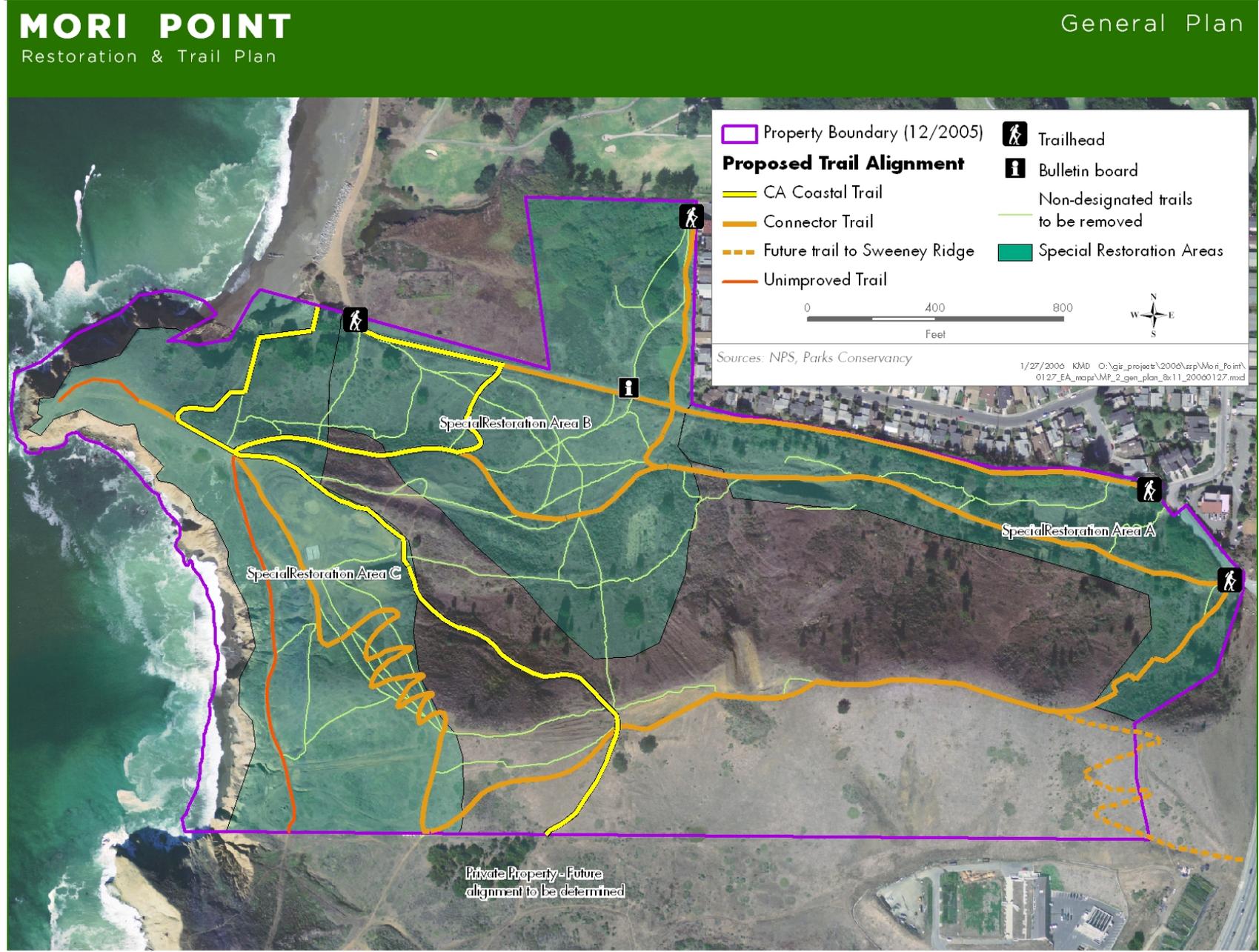


FIGURE 3. ALTERNATIVE 1: PREFERRED ALTERNATIVE.

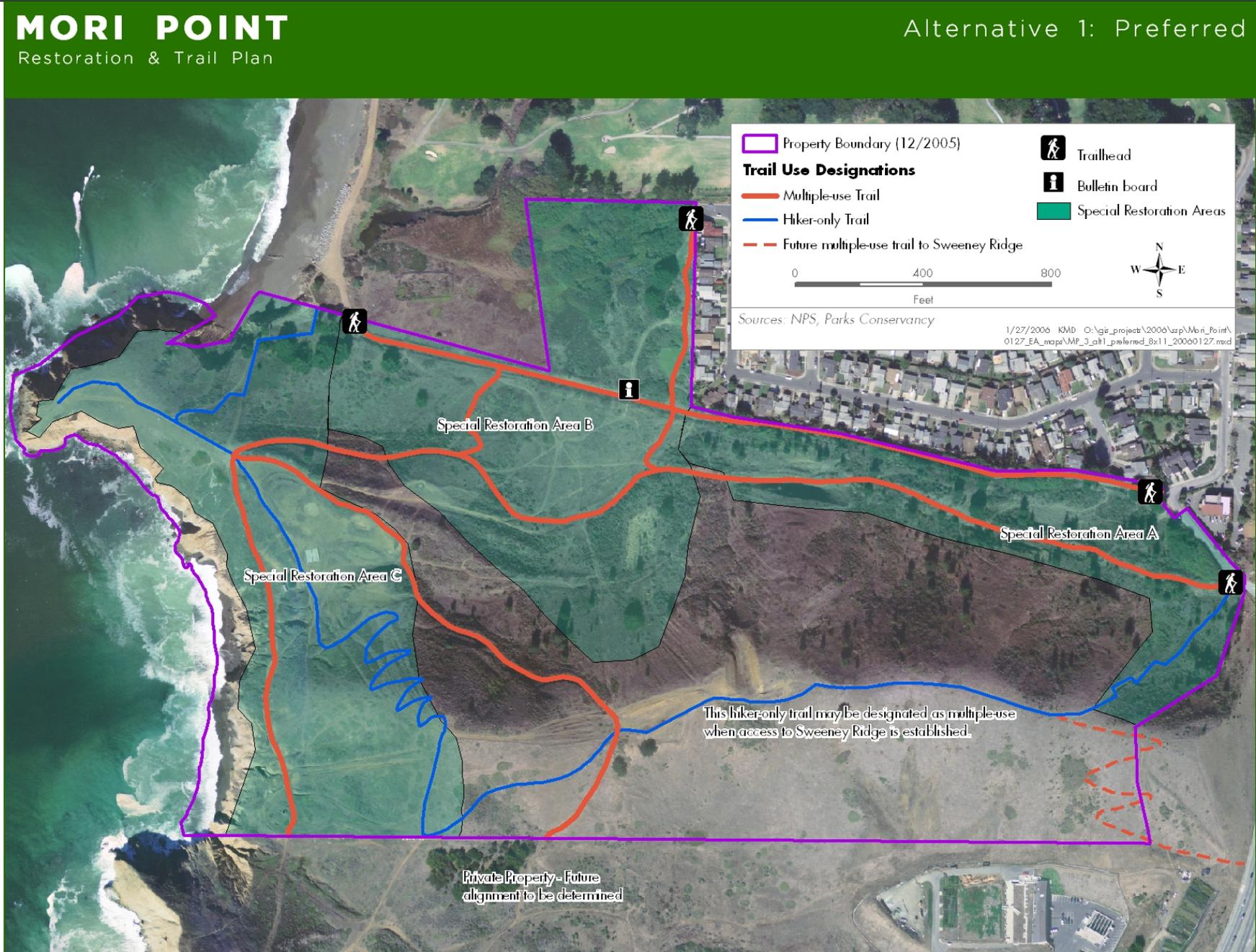


FIGURE 4. ALTERNATIVE 2: LIMITED MULTIPLE-USE

MORI POINT

Restoration & Trail Plan

Alternative 2: Limited Multiple-Use

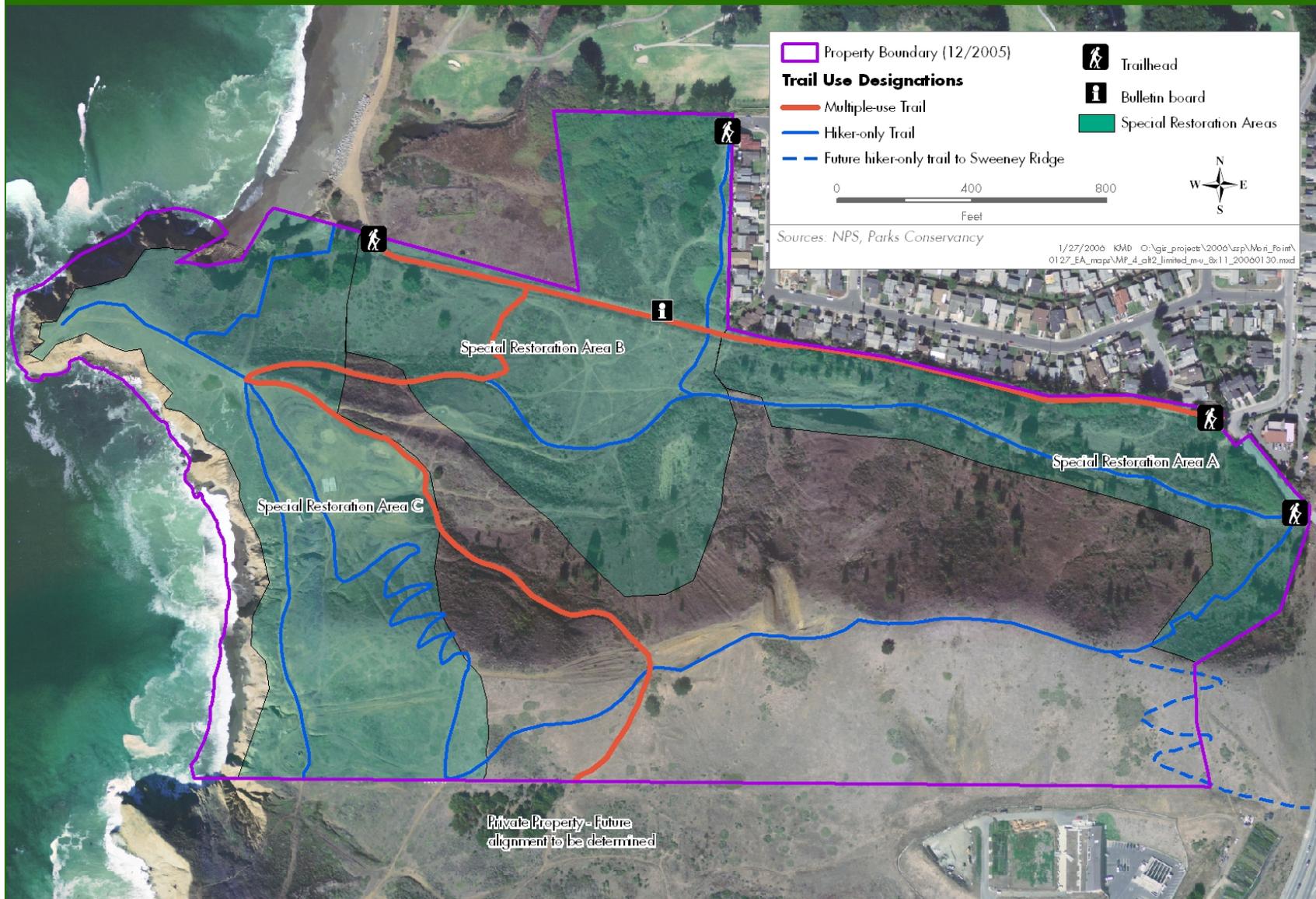


FIGURE 5. ALTERNATIVE 3: ALL MULTIPLE-USE.

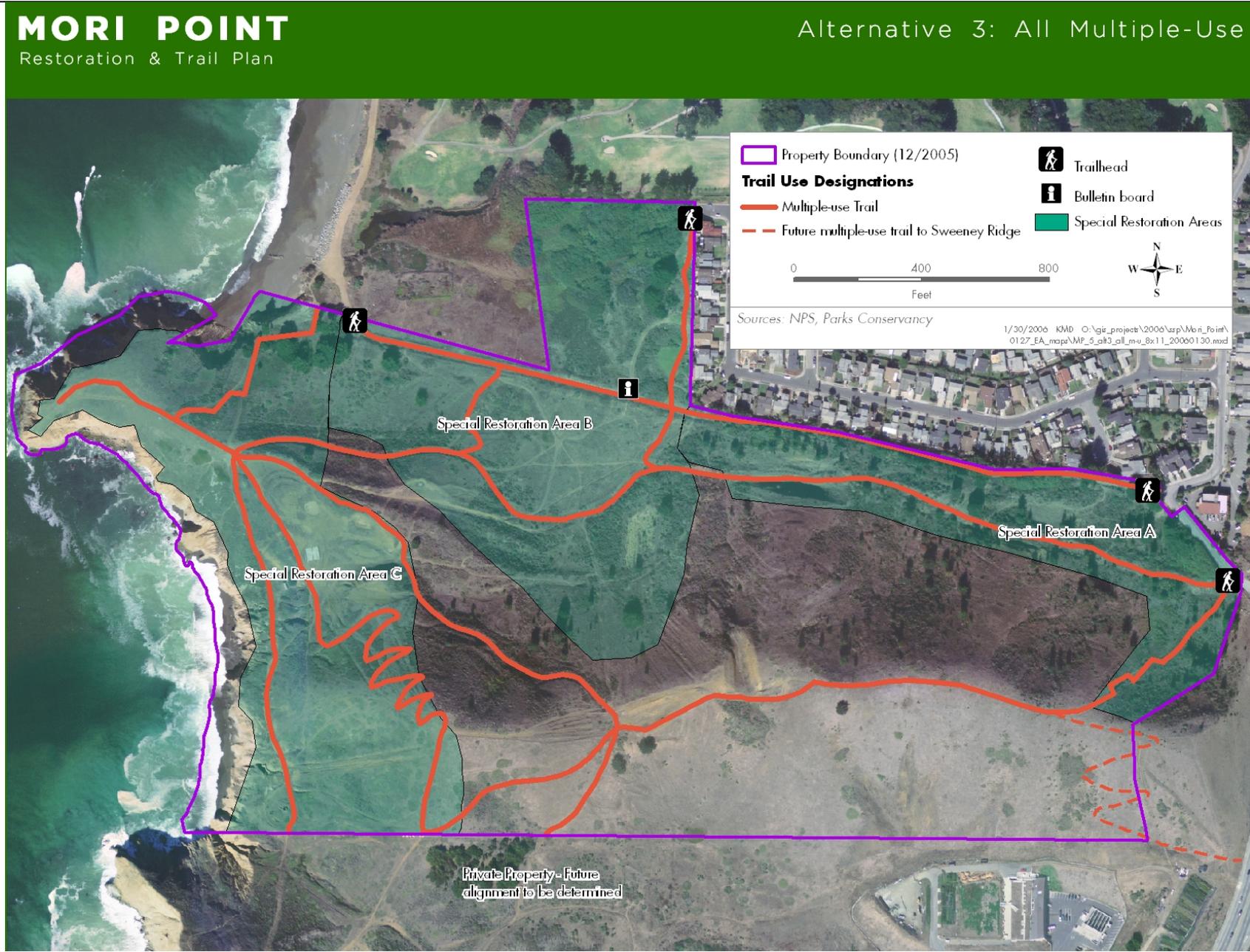


FIGURE 6. ALTERNATIVE 4 (NO ACTION ALTERNATIVE).



2.3.1.1 – Site-Wide Management Actions

Action 1: Protect San Francisco garter snakes from trampling and predation.

To protect the San Francisco garter snake from trampling due to vehicles, the GGNRA would coordinate with other agencies (GGNPC, City of San Francisco, Pacific Gas and Electric, San Mateo County Mosquito Abatement District, U.S. Coast Guard) and local landowners to minimize vehicular access to Mori Road. Further, segments of Mori Road may incorporate a boardwalk, bridge, or raised road with causeways to accommodate snake and frog movement. Exclosure fencing may be used to keep sensitive species away from areas subject to vehicular use. Heavy bicycle use in the future may pose trampling threats to reptiles that may be using trail surfaces for basking. Trail use designations along trail segments may change in response to natural resource protection needs.

The implementation of a comprehensive trail plan (discussed under Action 4 below) would meet this objective by minimizing vehicular, pedestrian, bicycle, equestrian, and dog traffic in the most sensitive San Francisco garter snake habitats, while enhancing the visitor experience by providing an upgraded trail system that would supply a variety of loop trails leading to popular destination points.

Another component of this action is to protect sensitive species from predation. Non-native introduced bullfrogs (*Rana catesbeiana*) are known to prey upon California red-legged frogs. At present, bullfrogs have not been detected at Mori Point. In order to complete their breeding cycle, bullfrogs require year-round water. To guard against establishment of this invasive predator, and subsequent decline of one of the San Francisco garter snake's major food sources, the California red-legged frog, all newly constructed ponds at Mori Point shall be designed so that they dry out for several months during the late summer. Should bullfrogs become established at Mori Point, the NPS would work with the U.S. Fish and Wildlife Service to determine a plan for controlling them.

Introduced mammals such as feral cats (*Felis domesticus*) are known to prey on small mammals, birds, and reptiles, and may pose a direct threat to the San Francisco garter snake as well as other wildlife. Any feral cats found at Mori Point would be captured live and taken to nearby humane societies.

Action 2: Restore native California plant communities including an appropriate mix of wetland, coastal grassland, and coastal scrub to support the threatened and endangered species at the site.

The implementation of a comprehensive trail plan (discussed under Action 4 below) would meet this objective by minimizing vehicular, pedestrian, bicycle, equestrian, and dog traffic in the most sensitive San Francisco garter snake habitats, while enhancing the visitor experience by providing an upgraded trail system that would supply a variety of loop trails leading to popular destination points.

In addition, the GGNRA would research the historic vegetation composition at Mori Point and

other sites known to have supported San Francisco garter snake populations. This information, in combination with NPS guidelines, would be used to create an appropriate mix of wetland, riparian, and open grassland, and coastal scrub habitats to support the threatened and endangered species at the site. This mix of habitats would be achieved by decompacting the soil in disturbed areas, planting, seeding, manipulating hydrology, or other appropriate techniques. All propagules would be collected from on site or within the watershed and would be propagated at the GGNPC nurseries, to the greatest extent practicable. Site preparation for planting may include removal of weeds and/or soil scraping, digging holes 6-12” deep and mulching with certified weed-free rice straw around outplanting sites. Follow-up maintenance may include watering or weed control as needed. See Figure 3 for proposed soil decompaction/planting areas.

Integral to the restoration of native plant communities is the control of invasive non-native plant species. Control would be prioritized based upon the species extent, invasiveness, and rate of spread. In some cases, only certain populations or life-stages may be targeted. The invasive non-native species within the project area are described in Table 4. Removal of non-native invasive trees would be limited to small trees measuring less than 8 inches in dbh (diameter at breast height) and those that directly threaten the quality of habitat for sensitive resources. All other trees will be left on site and removed only after become diseased, naturally die, topple, or pose a safety hazard. Various control methods may be employed which include, but are not limited to, manual, mechanical, and chemical techniques that would be implemented consistent with NPS Integrated Pest Management Program. These guidelines require evaluation of all available control methods and selection and use of the least toxic and effective method. Additionally, NPS would seek to coordinate control of nearby seed sources with adjacent landowners. Treatments that may be employed for controlling invasive species are described in Appendix B.

Action 3: Remove placed fills and remove trash, debris, and illegal structures after assessing San Francisco garter snake habitat value. Replace structures with functional habitat equivalent as appropriate.

On a case-by-case basis, the GGNRA would analyze the benefits of removing placed fills (non-native sand/gravel/rock, asphalt, cement, clay) (Figure 3) versus the risk of removal activities to sensitive species. Fill and structures would be removed if deemed necessary to the aesthetic and ecological integrity of the site. Removal would most likely entail the use of heavy machinery. Sites would be rehabilitated and revegetated as needed.

In order to create an environment consistent with a National Park setting, trash, debris, and illegal structures that mar the aesthetic value of the landscape would be removed, wherever possible (Figure 3). Prior to removal, all material would be assessed for habitat value to the San Francisco garter snake. Where feasible, structures that have habitat value would be replaced with natural materials such as wood and brush piles, to create functional equivalents for foraging, cover, or basking. Removal would take place by hand or by heavy machinery, where necessary.

Action 4: Implement a comprehensive trail plan that would protect and enhance native habitats as well as provide safe visitor access.

The proposed trail plan considers the location of endangered species habitat, incorporation of

popular destination points and already existing trails, creation of multiple loop routes, CCT outdoor recreation accessibility requirements, and inclusion of alternatives for north-south and east-west connector trails. To the maximum extent practicable, permanent fencing would be avoided to establish trail routes. Resource protection would be primarily achieved through methods such as fencing, signage, trail markers, re-vegetation, turnpikes, and/or boardwalk to ensure smooth flow and protect the sensitive habitats at the site. The proposed trail alignment would result in the following changes (Figure 7):

- Conversion of approximately 3.1 miles (4.1 acres) of non-designated trail to natural habitat.
- Improvement of approximately 3.5 miles (2.4 acres) of existing trail.

The trail alignment common to all Action Alternatives is described below. The trail names used below are for planning purposes only and permanent trail names may be designated in the future, with public input (Figure 8).

Trail Alignment

The northernmost entryway to Mori Point would be at Fairway Drive. Here, the Fairway Trail would run south to connect with Mori Road. This alignment would route multiple users around sensitive wetland habitats thereby protecting the San Francisco garter snake and the California red-legged frog from inadvertent trampling. The existing access trail, which begins just south of the Fairway Drive entrance and connects to Mori Road near the bulletin board would be decompacted and revegetated in order to reduce habitat fragmentation. The Fairway Drive entrance would lead into the heart of Mori Point, the intersection of the wetland habitats, and the upland “Bowl” area, at which point several trail options exist.

At the north-westernmost park entrance from the sea wall, visitors would have a choice of two California Coastal Trail (CCT) segments, each providing a north-south passage through Mori Point. The first would be the CCT Coastal Connector climbing up the coastline to allow visitors to enjoy the spectacular coastal views. This trail would follow the route of the trails that already parallel the coastline, but would be improved by the possible addition of stairs. This trail would connect with the remainder of the north-south CCT near the undesignated trail leading to Mori Point proper. An alternative trail, ideal for visitors seeking a less strenuous experience, would begin at the intersection of the sea wall and Mori Road. Visitors may follow Mori Road inland and then ascend gradually along the CCT Bowl Connector toward the south, largely along an existing road that would be narrowed to trail. This trail section, along with the rest of the CCT to the south, would meet American Disability Act outdoor recreation standards. The CCT Bowl Connector would switchback to the west via an improved existing trail where it would intersect with the Bluff Trail, the Peak Trail, and the Point Trail. The CCT would continue southeast along an improved existing trail through a stand of intact coastal scrub just north of Mori peak. Upon reaching Mori Ridge, the CCT would descend southward onto private land.

From the east, visitors may access the site through two entrances: at the junction of Mori Road close to Highway 1 or through the gate at Mori Road. The easiest route and one of the most popular, to the center of Mori Point is along Mori Road. Conversely, the trailhead closer to Highway 1 leads to the Upper Trail, which parallels Mori Road and offers a more natural experience and an alternate route to access the western part of the site. Visitors can remain on fairly level ground by using the Upper Trail, a narrower and improved version of the already

FIGURE 7. POTENTIAL IMPACT AREAS OF PROPOSED ACTIONS.

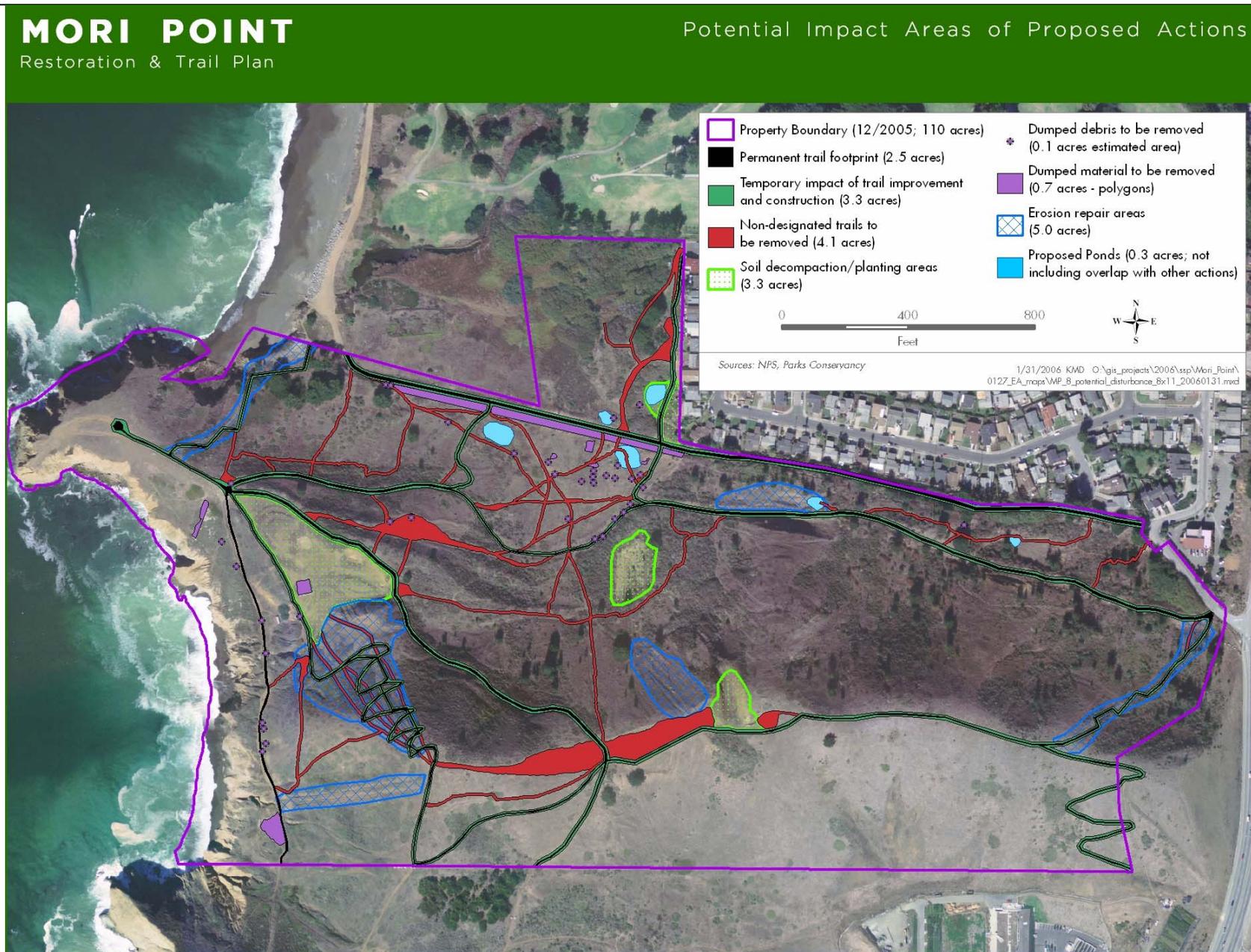


FIGURE 8. TRAIL AND AREA NAMES (FOR PLANNING PURPOSES).



extant roadway, heading west towards the Bowl. Upon reaching the Bowl, one can turn north along an improved existing trail (Bowl Trail) to reach Mori Road, or turn south along the Bowl Trail, a contour trail that skirts the perimeter of Mori's most sensitive upland habitat to connect to the CCT Bowl Connector. The Bowl Trail is comprised of improved existing trail and new trail that follows the Bowl's natural topography. The GGNRA would collaborate with the City of San Francisco, who has an easement on the road, to determine the feasibility of constructing a raised, drivable short boardwalk or bridge along this section of road that would allow for safe movement of the San Francisco garter snake and other small animals under the structure. The berm along the south side of the road would also be breached on the eastern end to allow for water flow under the boardwalk/bridge. Thus, the boardwalk/bridge would also provide a drier and more aesthetically pleasing path for visitors to walk to the seawall and adjacent trails. This boardwalk/bridge would begin near the eastern edge of the West Fairway Park housing development and end just west of the newly constructed pond. The boardwalk/bridge would remain drivable to allow for emergency and other maintenance-related vehicle access.

The tangled network of unofficial trails in the Bowl would be decompacted and restored to a more natural state for the benefit of sensitive species, ecological integrity, and the viewshed. In addition, interpretive signage near the Bowl would build awareness of San Francisco garter snake habitat and the public's role in protecting it by staying on the assigned trails. Alternatively, a more challenging and scenic route from the easternmost part of the park exists by way of a series of stairs running up to the Crest Trail where an improved existing trail would follow the ridgeline directly west to intersect with the CCT. At this intersection, one can turn north or south on the CCT, or follow the Peak Trail to climb to the summit of Mori's highest vantage point. From the summit, the Peak Trail continues downslope to connect with the Bluff and other trails.

The northern intersection of the Peak Trail and the CCT is the gateway to two of Mori Point's most popular destinations - the coastal bluffs and Mori Point proper. According to hydrologists, the Bluff Trail is badly eroding. With the expectation that it may be non-existent in 10 years, the NPS would not commit resources to construct upgrades. Similarly, trails out to the Point would remain unimproved.

All other existing trails and roadways would be restored to habitat to maximize the natural landscape experience and reduce habitat fragmentation. The GGNRA intends to minimize the use of permanent fencing, unless monitoring indicated a clear need, and may employ other methods such as signage, trail markers, revegetation, turnpikes, and/or boardwalk to ensure smooth flow and protect the sensitive habitats at the site.

Details on trail construction and deconstruction methods are in Appendix C.

Action 5. Installation of additional site improvements.

Possible site improvements may include, but are not limited to, the following: public safety, regulatory, interpretive, and wayfinding signage; accessible site furnishings (e.g. benches and picnic tables); accessible toilets; vault or other method; bicycle racks; trailhead improvements such as kiosks, waysides, or landscaping improvements; parking improvements and

definition/designation of parking spaces; and limited fencing for safety or to protect sensitive habitat. An NPS natural resources staff person or qualified biologist shall review all proposed site improvement locations prior to approval and installation. If the site improvement feature is proposed within or adjacent to a sensitive resource, the feature will be reconfigured to avoid the sensitive resource or additional environmental compliance will be completed as appropriate. If necessary, re-consultation with USFWS may be required, possibly resulting in an amendment to the Biological Opinion for the proposed project.

Action 6. Restoration of three specific areas.

Special Restoration Area A: Ensure access through Special Restoration Area A without compromising slope stability or sensitive habitat.

Two main trail corridors run through Special Restoration Area A- Mori Road and Upper Trail (Figure 9). Mori Road runs parallel to the Upper Trail, and both are considered main arteries into Mori Point. The Upper Trail is in poor condition, with heavy water pooling occurring on the trail during the winter months. Visitors using the Upper Trail during the winter months are forced to travel along the sides of the trail, thereby creating new non-designated trails. The berms and hillside surrounding the Upper Trail, in particular, support a large number of rodent holes, which may house San Francisco garter snakes that are using the burrows to pass the summer in a dormant state (aestivating).

Because of the sensitive species in the area, re-grading the slope and outsloping the trail, which is the regularly applied prescription for problems with water pooling along trails, would not be employed. Instead, a study would be conducted in association with the final trail design to outline the main drainage pathways and contributing drainage areas under existing and proposed project conditions. Recommendations and/or treatments for this slope area would be based upon study results, but a trail prescription would likely involve smoothing the trail, adding a permeable top surface, and de-watering the trail by installing drains and other devices. The GGNRA would also study the drainage patterns and culverts along the lower road, with special attention to improving conditions for adjacent residents as well as the rare San Francisco forktail damselfly that is found on-site.

Special Restoration Area B: Improve hydrologic and habitat connectivity between upland and wetland areas AND Create ponds for San Francisco garter snake foraging habitat.

Special Restoration Area B (Figure 10) contains the wetland and adjacent Bowl, where the greatest number of San Francisco garter snake observations have been recorded. Currently, the upland and wetland habitats are separated by Mori Road and a human-constructed berm running parallel to the road on the south side. The road bisects an area that is important core habitat for both the San Francisco garter snake and the California red-legged frog, and therefore the focus of restoration measures is on improving connectivity between the upland and lower habitat areas.

Portions of the berm would be removed in order to create habitat and hydrologic connectivity. Given the sensitivity of the site, berm removal would be phased, beginning with breaching the

FIGURE 9. SPECIAL RESTORATION AREA A.

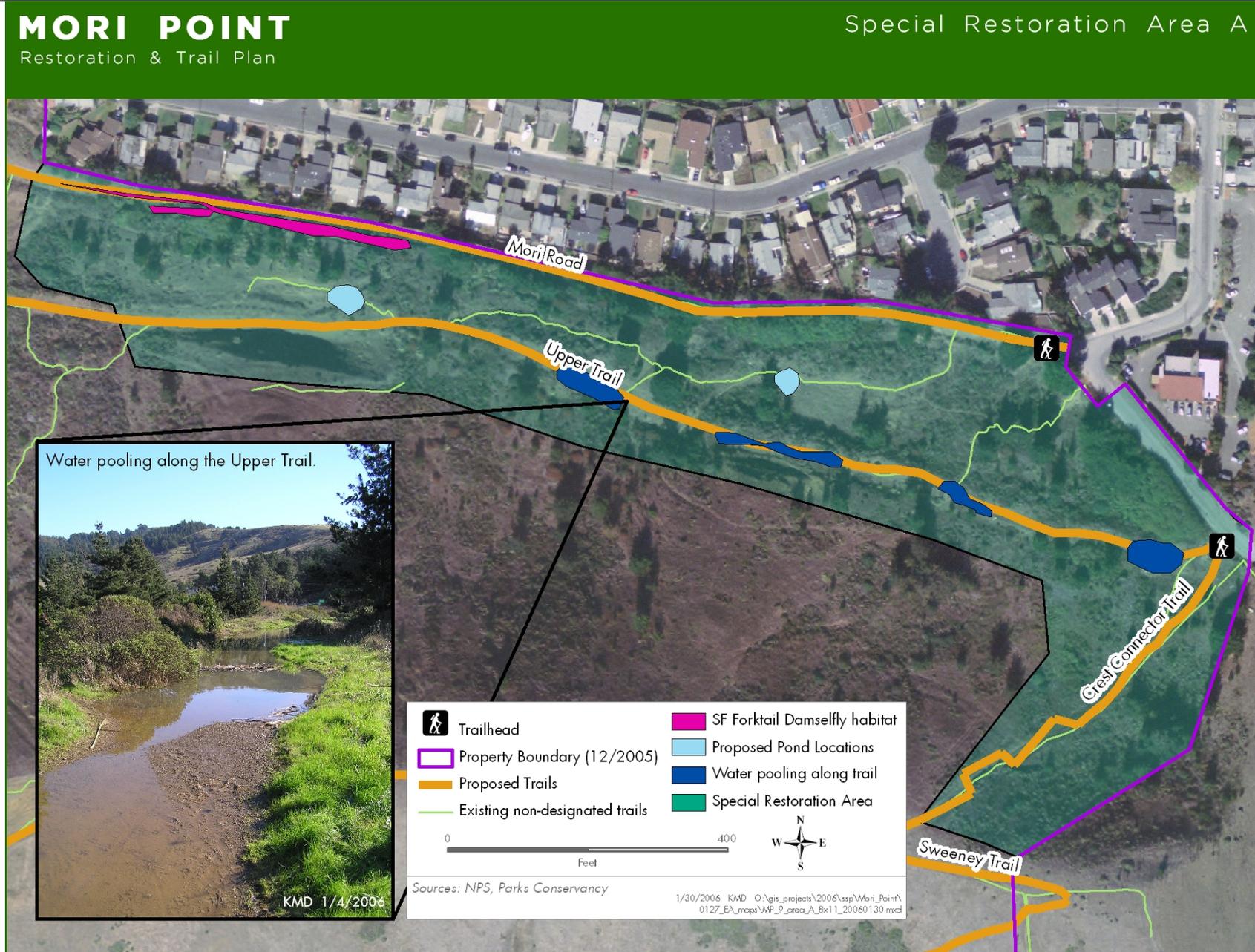
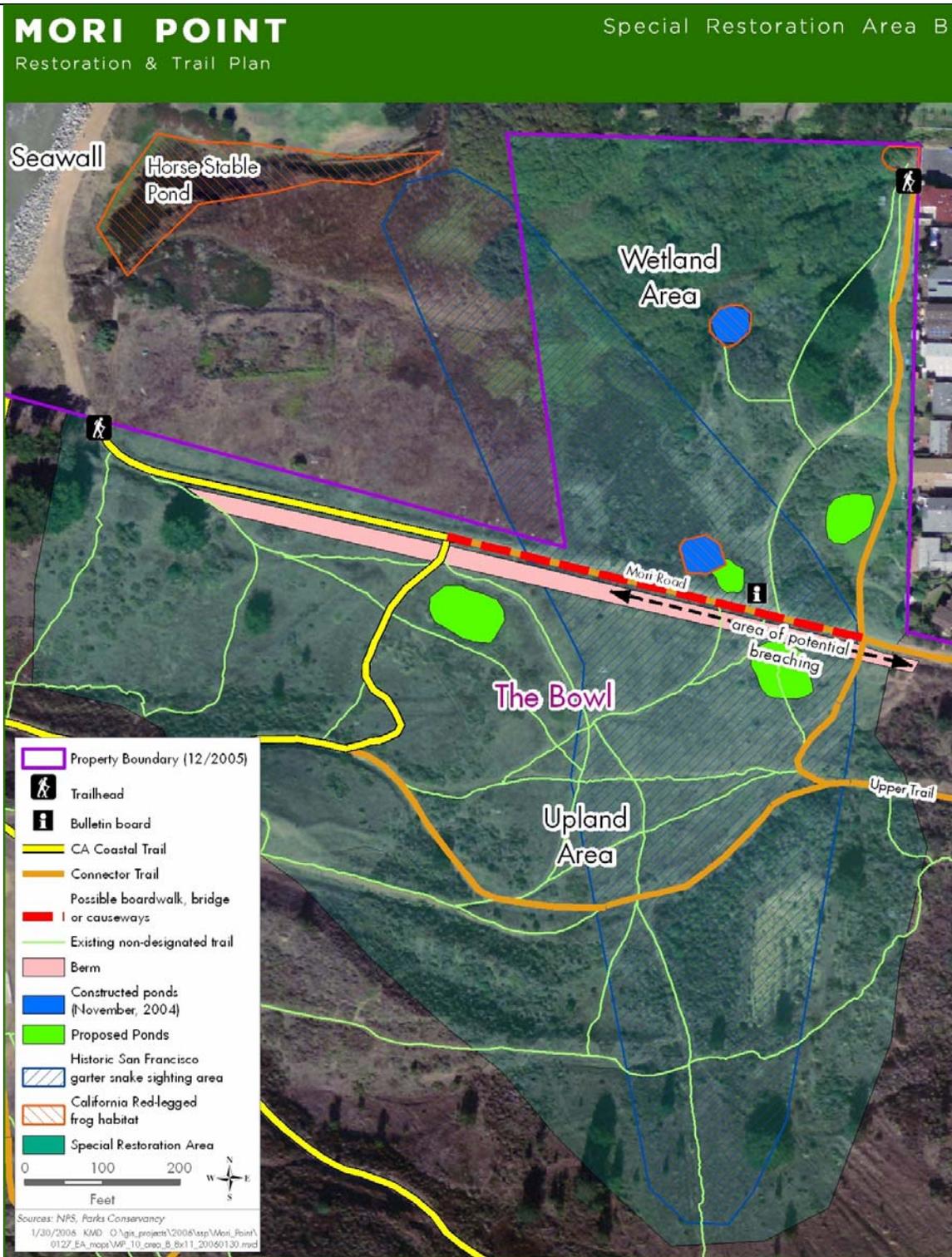


FIGURE 10. SPECIAL RESTORATION AREA B.



eastern end to allow more flow of water between the upland and lowland habitats. This water would either flow directly into the lower wetland area, or be diverted into another constructed pond, if found feasible.

The GGNRA would collaborate with the City of San Francisco to determine the feasibility of constructing a raised, drivable boardwalk or bridge along this section of road that would allow for safe movement of the San Francisco garter snake and other small animals under the structure. The berm on the south side of the road would also be breached in the vicinity of the boardwalk/bridge, allowing water to flow under it, providing for a drier and more aesthetically pleasing path for visitors to walk to the seawall and adjacent trails. This boardwalk/bridge would begin near the eastern edge of the West Fairway Park housing development and end near the western end of the newly constructed pond. It would remain drivable to allow for emergency and other maintenance-related vehicle access.

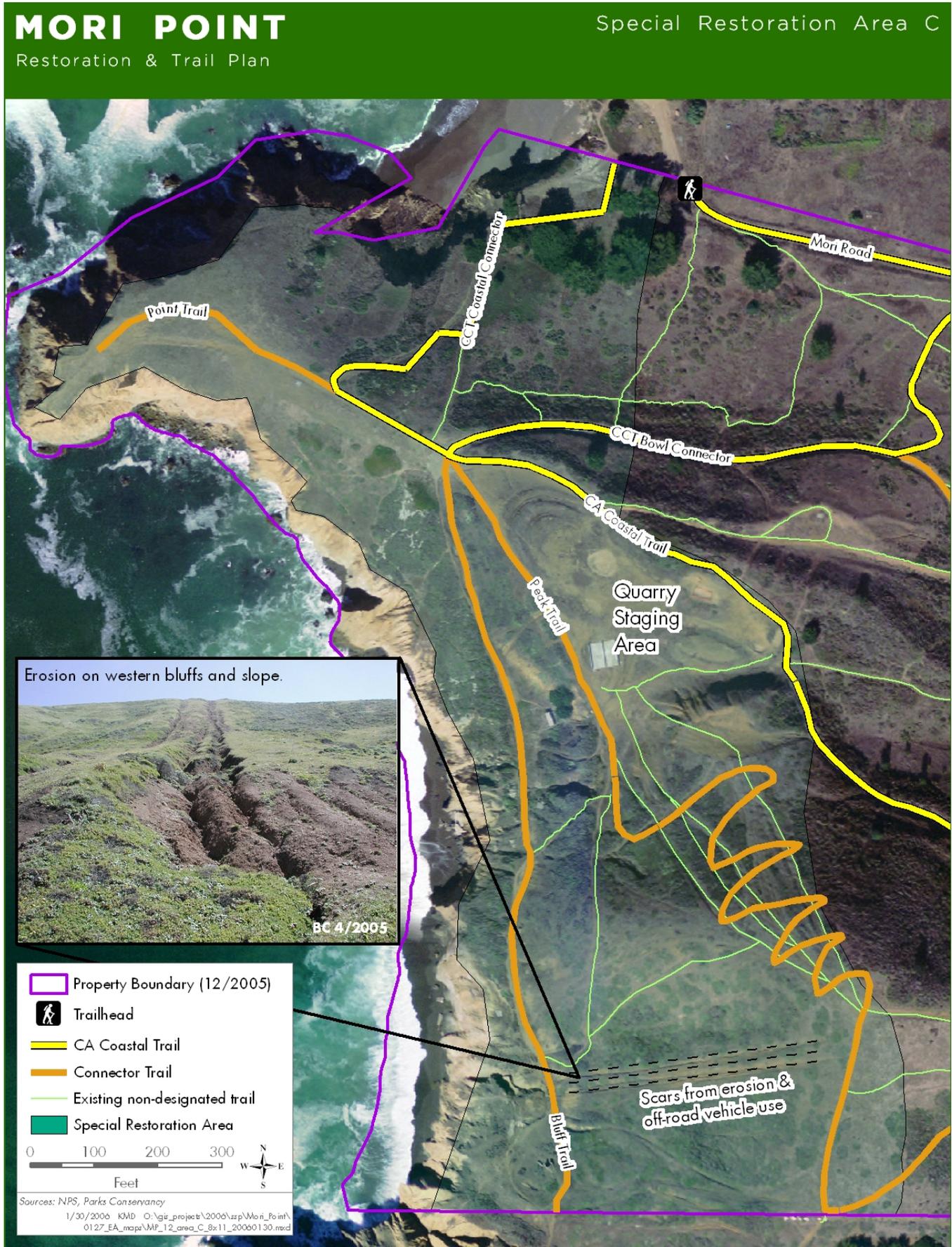
Additional seasonal ponds would be created in up to five locations both north and south of Mori Road. One design criterion for pond creation is sustained ponding into early summer, with ponds drying out by mid to late summer in order to preclude potential predators such as bullfrogs. Other design criteria would apply, include locating ponds away from trails if fencing is not used. Although further detailed study is needed to determine optimal pond location, size, and depth, five potential sites for pond creation have been identified. These potential sites are described and depicted in Appendix D.

Created ponds that receive rainfall-runoff as a water supply would also receive sediment, which, over the long-term, would fill and alter the function of the ponds. Thus, the ponds may be maintained by periodically removing sediment or by creating an upstream sediment detention basin. Sediment removal would be restricted to late summer or fall periods when the San Francisco garter snake is not using the ponds. Alternatively, ponds could be located near Sanchez Creek where water levels may be maintained by seasonally high groundwater conditions.

Special Restoration Area C: Reduce human-caused and accelerated erosion to restore natural processes.

Special Restoration Area C (Figure 11) has a coastal erosion rate that is up to 40 percent higher than the coast just north and south (Campbell, 2005). The estimated soil and sediment loss for this area exceeds twenty thousand cubic yards annually. This accelerated erosion has been and is still caused by poorly placed fills, quarrying operations, off-road vehicle use, buried debris and non-designated trails. Erosion starts near the top of the ridge and continues down toward the Pacific Ocean. This area is characterized by large soil and rock fill sites, evidence of road beds buried under five feet of fill, debris buried under as much as 20 feet of fill, broken concrete, tires, metal, and other materials. Above the Bluff Trail, erosion gullies reach up to six feet deep and below the Bluff Trail they can be more than 30 feet deep.

FIGURE 11. SPECIAL RESTORATION AREA C.



In order to reduce human-caused and accelerated erosion above the Bluff Trail, the grade would be recontoured beginning at the ridge top and continuing down the western slope within the gully areas. All topsoil from the recontoured site would be recovered and placed on scarified sites to restore original natural contours. All debris encountered during excavation would be removed from the site. Check dams would be installed in gullies over two feet in depth to erase hydrologic memory. Soil from the fill site areas would be placed in the gullies and compacted. All finished contours of a grade exceeding 15 percent would be stabilized by covering with erosion matting or certified weed free rice straw and securely fixed in place. Once natural contours and drainage patterns have been established, the site may be revegetated in order to further stabilize the soil.

2.3.1.2 – Long-term Stewardship Actions

Action 1: Maintain trails.

The GGNRA would conduct regular maintenance of the new and restored trail segments, including trimming of trailside vegetation, replacement of trail base material, and possible localized soil disturbance (such as to repair erosional features or construct water bars). Maintenance activities would also include the monitoring, repair, and/or replacement of attendant features such as fencing, signs, trail markers, turnpikes, and boardwalks.

Action 2: Continue to restore native plant communities.

The GGNRA plans to continue active restoration within selected portions of the project area; restoration actions would be conducted as described under Site-wide Management Actions, Action 2. Non-native invasive plant control actions would be conducted as described in Appendix B.

Action 3: Develop and implement a monitoring system to track progress for restoration goals.

Photo-monitoring would be conducted on a site-wide and project-specific level as necessary. Periodically invasive plant species would be surveyed to track their expansion and/or decline. Monitoring and survey work for the California red-legged frog and the San Francisco garter snake would be conducted. Monitoring efforts may include trail and road use (including off-trail use, off-leash dogs, etc.), aquatic predator presence (bullfrogs, feral animals), and erosion.

Action 4: Engage the community in the implementation of management objectives.

Community members would be invited to participate in the implementation of appropriate management activities through active outreach, education, and stewardship efforts. Volunteer programs and educational partnerships would be broadened, and regular opportunities for community participation would be offered at the site. The GGNRA would continue to cultivate relationships and coordinate its management efforts with adjacent landowners, local non-profits, other agencies and local community members.

Action 5: Build public awareness on the appropriate use of the site, and protect habitat from unauthorized and/or destructive use.

The GGNRA would make efforts to educate visitors on the appropriate use of the site, particularly in endangered species habitat, using those education activities described in Action 6, below. The GGNRA would integrate local community support in education and enforcement efforts. Educational signage and protective fencing may also be used to protect sensitive areas from disturbance.

Action 6: Build public awareness on the unique values and recreational opportunities at Mori Point.

To build public awareness, the GGNRA and/or its partners would offer educational walks and related programs on both the cultural and natural resources found at Mori Point. In addition, outreach and education materials would be developed and the existing on-site bulletin board would be maintained and updated regularly. Regular volunteer workdays would be offered for community members interested in hands-on learning and experiences. The GGNRA would also partner with other organizations to assist with public education efforts. These partners may include the Pacifica GGNRA Liaison Committee, the San Francisco Zoo, the U.S. Fish and Wildlife Service, the California Coastal Conservancy, the City of Pacifica and any regular user groups at the site. To the extent that resources become available, educational efforts would extend into the schools through presentations and on-site field trips. Opportunities to engage the media would also be pursued.

2.3.2 Alternatives

The proposed trail use designations consider appropriateness within the context of endangered species habitat, incorporation of popular destination points and already existing trails, creation of multiple loop routes, California Coastal Trail outdoor recreation accessibility requirements, and inclusion of alternatives for north-south and east-west connector trails. All trails were evaluated for suitability for uses over and above hiker-only, including biking and equestrian use.

2.3.2.1 Alternative 1 (Preferred Alternative)

In the Preferred Alternative, hiker-only designations would be in effect on all segments through, or leading to, steep and erosive areas. Multiple-use trails would include the California Coastal Trail and its main connector routes - Mori Road, the CCT Bowl Connector, Fairway Trail, Upper Trail, and the unimproved Bluff Trail.

Because of the difficulty, expense, and elevated maintenance associated with multiple-use trails on steep and eroding slopes, the CCT connector, the Crest Connector Trail, and the Peak trail were not considered for use above and beyond hiker-only.

Another consideration for trail use designation was to ensure recreational opportunities for all park users. During public scoping, the park received strong support for multiple-use trails, but also heard from community members wanting to preserve a hiker-only experience. To best accommodate all user groups, trails for separate uses were designated within the most frequented

sites at Mori Point, namely, trails centered around the western bluffs. In this area, some trails are designated hiker-only (CCT Connector, Peak trail) while others are designated multiple-use (CCT, Bluff Trail).

The importance creating loop routes to avoid dead ends was also considered as part of the process to designation trail use. At Mori Point, the flat topography of the Crest Trail is such that designation of multiple-use would be considered. The Crest Connector Trail would be unsuitable for multiple-use due to its steep topography, and following the Crest Trail toward the east would result in a dead-end situation for bikers and equestrians. Dead-ends tend to encourage the development of unauthorized, non-designated trails in order to reach destination points. Unofficial use of the Crest Connector Trail for biking and horseback riding, either on the trail or along-side the trail, would contribute to the already eroded and degraded landscape at Mori Point. In order to avoid such adverse impacts to the Crest Connector Trail, the Crest Trail would be designated hiker-only.

The GGNRA, however, is considering future construction of a multiple-use trail connecting Mori Point's Crest Trail to Sweeney Ridge by way of a highway overpass when planning for Highway 1 improvements are undertaken by the California Department of Transportation. If such a connection is constructed, the Crest Trail would no longer dead end. If and when a connection to Sweeney Ridge becomes viable, the Crest Trail would be considered for multiple-use designation.

2.3.2.2 Alternative 2 (Limited Multiple-use)

Alternative 2 differs from the Preferred Alternative only in trail-use designation. Under Alternative 2, only Mori Road and the CCT would be designated multiple-use (Figure 4). All remaining trails would be designated hiker-only. Mori Road would be multiple-use because, as a road, it is constructed to be able to support such purposes and because it is used by GGNRA and other public agencies periodically for maintenance and emergency access. The CCT would be multiple-use because the California Coastal Conservancy guidelines support the concept of multiple-use on the CCT. Thus, the CCT would be constructed wide enough to support different user groups, including those requiring more accessible conditions, to minimize conflict between user groups. All other trails would remain hiker-only to facilitate ease of construction and maintenance, as well as provide maximum protection for natural resources and a varied experience for visitors.

2.3.2.3 Alternative 3 (All Multiple-use)

Alternative 3 differs from the Preferred Alternative only in trail-use designation. Under Alternative 3, all trails would be designated multiple-use (Figure 5).

To accomplish this, trails on steep and eroding slopes would need to be constructed according to unique specifications in order to accommodate hikers, bikers, and equestrians without damage to natural resources. Trails would need to incorporate features such as bike-ramps to facilitate walking bikes up and down stairs, multiple stair sections with landings between them to discourage bike riding on steps and to allow for certain users to yield to each other (for example,

bikers yielding to pedestrians, and bikers and pedestrians yielding to equestrians).

2.3.2.4 *Alternative 4 (No Action)*

Under the “No Action Alternative”, the GGNRA would continue only the management practices that have been approved by the USFWS at this time (Figure 6). These include posting interpretive signs, constructing up to four artificial ponds for San Francisco garter snake breeding habitat, removing small pampas grass plants, lopping pampas grass inflorescences (flower- or seed-heads) to reduce germination of new plants, pulling French broom plants in locations without rodent burrows, and conducting limited erosion control. Trails would remain non-designated and no trail removal, trail construction, or trail improvement would occur.

2.4 - Alternatives and Actions Considered but Eliminated from Detailed Study

A variety of other alternatives and actions were suggested and considered during the scoping period. Those that were considered, but rejected from further evaluation, are presented below with the explanation for their rejection (Figure 12).

2.4.1 Trail Alignment Alternatives Eliminated from Detailed Study

These alternatives all feature trail alignments (Figure 12) that differ from the Preferred Alternative (Figure 3). They include: alignment for the Bowl Trail that bisects the Bowl instead of circumnavigating it; excluding the Bluff Trail and the coastal connector from formal trail designation; inclusion of an alternative Bluff Trail leading upslope towards the south; exclusion of the Peak Trail connecting the peak and the Bluff Trail; a contour alignment instead of the ridge alignment for the Crest Trail; and construction of a new CCT connecting the remainder of the CCT to Mori Road. Each alignment alternative is discussed below.

Bowl Trail:

This alignment was rejected because it runs directly through the most sensitive upland habitat for the San Francisco garter snake on the site. The alignment in the Preferred Alternative skirts the most sensitive habitat while providing better views of the coastal landscape. It also primarily follows previously existing trail and would thereby minimize construction-related impacts to the San Francisco garter snake.

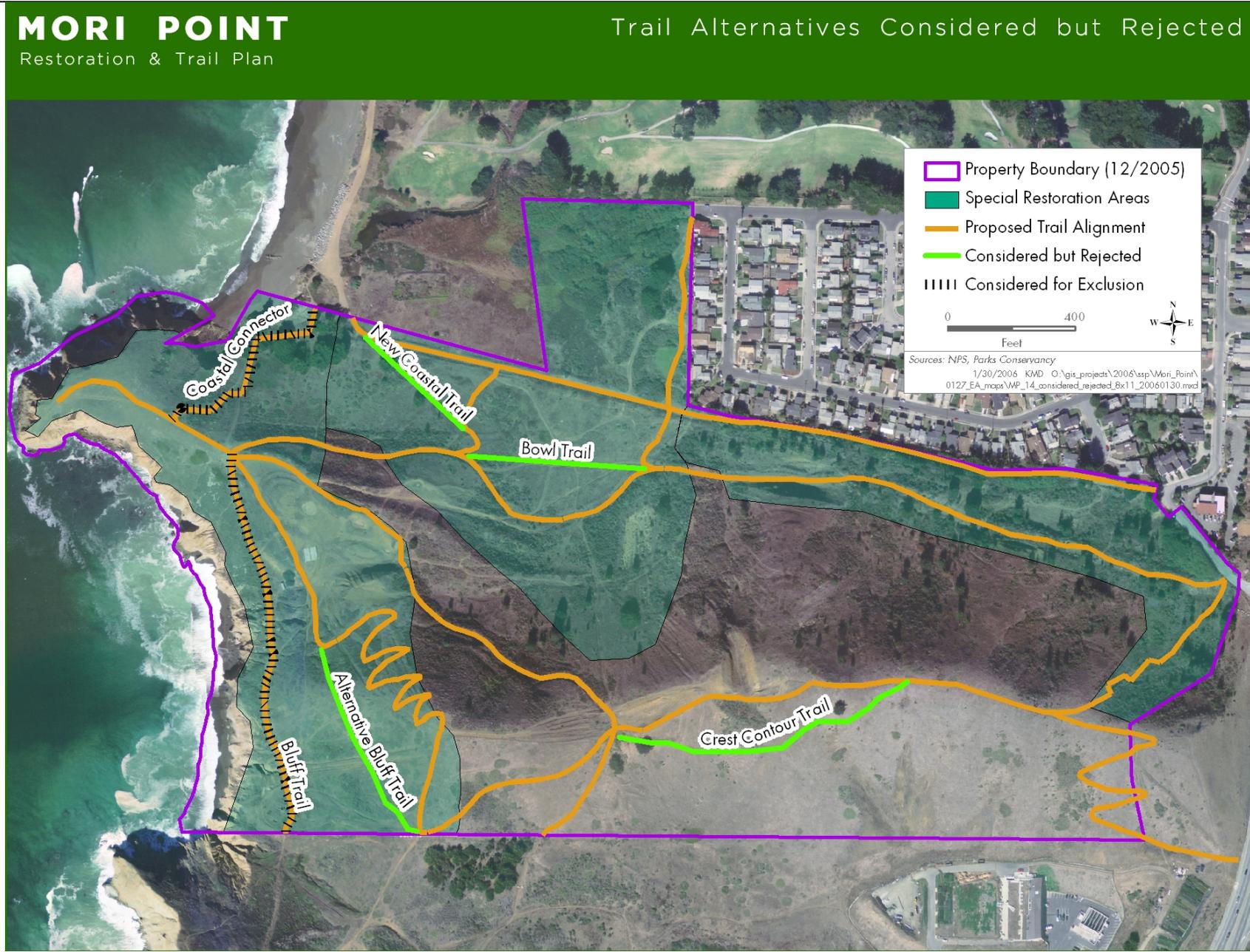
No Bluff Trail:

In this alternative, the Bluff Trail would not be included as a formal part of the trail plan. This alternative was considered because, according to hydrologists, the bluff area on which the trail is located is badly eroding and may be non-existent in 10 years. It is included in the Preferred Alternative as unimproved trail.

No CCT Coastal Connector:

The CCT Coastal Connector was excluded under the draft plan that was taken to scoping. This was due to the elevated erosion rates along the coast. However, the CCT Coastal Connector is included in the Preferred Alternative as it provides an opportunity for visitors to experience the trail close to the scenic coastline.

FIGURE 12. TRAIL ALTERNATIVES CONSIDERED BUT REJECTED.



Crest Contour Trail:

A contour trail would be constructed along the south side of Mori Ridge and the non-designated Crest Trail would be closed. Though this option presented several beneficial features, such as more sustainable trail construction and an easier, flatter route, it was dismissed for several reasons. According to the user survey, the peak near the notch is a popular destination point. Routing people away from this point would ultimately be counterproductive, as the current trail would likely be used anyway. Also, installation of a contour trail would involve cutting new trail, which would need to be mitigated for construction-related adverse impacts. The contour trail would not offer the scenic coastal views that are found toward the north, whereas the Crest Trail in the Preferred Alternative offers a 360-degree panorama.

Alternative Bluff Trail:

This trail would serve as an alternative for the Bluff Trail, which would not be formally included in the trail plan. The trail would begin just above the Bluff Trail, but then ascend toward the south to meet up with the CCT. This alignment was rejected because it would not serve as an adequate alternative to the Bluff Trail for the following reasons. The Bluff Trail is flat and wide and can be used by many regardless of physical ability. The alternative trail would be steeper and would thereby exclude some visitors. Secondly, installation would require cutting a new trail in otherwise undisturbed land and extensive mitigation for potential construction-related disturbance to the San Francisco garter snake would need to be employed.

New Coastal Trail:

This option was dismissed because it would involve cutting a new trail through relatively undisturbed land. The construction process would need to be accompanied by in-depth best management practices involving the hand excavation of rodent burrows to ensure that San Francisco garter snakes are not harmed during construction. Also, a new trail would further fragment habitat. It was decided to use existing trail to the maximum extent practicable.

2.4.2 Restoration Alternatives Eliminated from Detailed Study

Special Restoration Area A:

The unnatural earth benches would be recontoured and dewatered by removing the berms, narrowing the bench area, outslipping and filling the roads and trails, and restoring natural hydrologic flow down the slope.

Special Restoration Area C:

The bluff zone from the top of the bluff to the high water line would be recontoured and all concrete removed. This would address the loss of land due to erosion along the coast caused by poorly placed fills, quarrying operations, off road vehicle use, buried debris, and non-designated trails. The bluff zone from the top of the bluff to the high water line contains large soil and rock fill, evidence of road beds buried under debris, and buried concrete and debris.

These actions were rejected because they entail an extensive amount of soil movement using heavy machinery, which would likely result in construction-related impacts to the site's federally listed species. Since the San Francisco garter snake can be found in upland rodent burrows, extensive mitigation measures would need to be employed, including snake surveys, fencing

work areas, and hand excavating all rodent burrows that are within the project footprint. It was determined that both the risk to the San Francisco garter snake and the cost of mitigating this risk would outweigh the benefits of complete hydrological restoration.

2.4.3 Other Recreational Use Alternatives Eliminated from Detailed Study

Paragliding:

Future permitted use of the site for paragliding landing was considered but rejected based on the negative impacts to threatened and endangered species habitat.

2.5 Comparison of Alternatives

The following table (Table 1) compares the differences between the four project alternatives, particularly the differences between trail use designations.

TABLE 1. COMPARISON OF PROJECT ALTERNATIVES

	Alternative 1 - Preferred	Alternative 2 – Limited Multiple-use	Alternative 3 - All Multiple-use	Alternative 4 - No Action
Project Scope	All Site-wide Management Actions and Long –term Stewardship Actions	All Site-wide Management Actions and Long –term Stewardship Actions	All Site-wide Management Actions and Long –term Stewardship Actions	Limited invasive species removal, limited public outreach
Trail Use Designation	Multiple-use trails are: Mori Road, CCT, CCT Bowl Connector, Fairway Trail, Upper Trail, and Bluff Trail.	Multiple-use trails are: Mori Road and CCT.	All trails would be multiple-use	Trails would not be designated

2.6 Environmentally Preferred Alternative

The CEQ Regulations implementing NEPA and the NPS NEPA guidelines require that “the alternative or alternatives which were considered to be environmentally preferable” be identified (Council on Environmental Quality Regulations, Section 1505.2). Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources.

The Council on Environmental Quality defines the environmentally preferred alternative as “...the alternative that will promote the national environmental policy as expressed in the National Environmental Policy Act’s §101.” Section 101 of the National Environmental Policy Act states that “... it is the continuing responsibility of the Federal Government to ... (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing

surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice; (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.”

The National Park Service has determined that the environmentally preferred alternative for this project is Alternative 1: the Preferred Alternative. This alternative would best meet the requirements in Section 101 of NEPA and would have the greatest benefits to natural and visitor resources at the site. The project includes habitat restoration and protection for federally listed species, improving hydrologic and habitat connectivity, long-term stewardship actions while creating safe and sustainable access of the site for visitors.

2.7 Mitigation Summary

The proposed project would permanently install 2.5 acres² of trail. The majority of this construction will take place on existing non-designated trails or disturbed areas, though less than 0.3 acres of new trail will be built on areas that currently support native vegetation. The improvement and/or construction of these trails will result in temporary adverse impacts to an additional 3.3 acres. Pond construction will result in the disturbance of up to 0.4 acres of existing habitat. Despite the short-term adverse impact of pond construction, the ponds themselves will have long-term beneficial impacts to site resources. Other long-term beneficial impacts include restoration of approximately 13.3 acres of habitat resulting from 4.1 acres of non-designated trail removal, 5.0 acres of erosion repair, 3.3 acres of soil decompaction and planting, and 0.8 acres of debris and fill removal. Although restoration of these areas may have temporary adverse impacts on the site, these activities are being conducted specifically to enhance the extent, quality, protection, and connectivity on-site habitat for resident wildlife species and to promote native species diversity. This would result in an approximate mitigation ratio 5:1 of restored to impacted habitat for permanent impacts. Additionally, long-term stewardship actions, such as invasive species removal, will occur throughout the site, thereby improving habitat quality over all 110 acres.

Appendix E contains Best Management Practices that will guide project implementation and a Mitigation Table that summarizes mitigations in the EA.

² all area measurements are approximate.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

The National Environmental Policy Act (NEPA) requires that environmental documents disclose the environmental impacts of a proposed federal action, reasonable alternatives to that action, and any adverse environmental effects that cannot be avoided should the proposed action be implemented. NEPA requires consideration of context, intensity, and duration of impacts, indirect impacts, cumulative impacts, and measures to mitigate impacts. NPS policy also requires that “impairment” of resources be evaluated in all environmental documents.

Under the Endangered Species Act of 1973, the likelihood of a project to “adversely affect” federally protected species must be evaluated.

3.2 General Methodology

Beginning with Section 3.4, each resource type (geology and soils, hydrology and water quality, biological resources, cultural resources, public safety, air quality, visitor use and recreation, noise, and visual resources) is described under “affected environment”.

Adverse, beneficial, and cumulative impacts are then analyzed for each alternative. This analysis considers “duration”, “context”, “intensity”, and “type of impact”, as defined below. Finally, a conclusion is drawn as to the “significance” of impact that each alternative is expected to have on each resource type and whether the proposed project is expected to result in “impairment” to park resources.

3.2.1 Duration

The duration of the impact considers whether the impact would occur in the short-term or the long-term.

- **Short-term** impacts are temporary, transitional, or construction-related impacts associated with project activities.
- **Long-term** impacts are typically those effects that would last several years or more or would be permanent.

3.2.2 Context

The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis:

- **Local impacts** would generally occur within the immediate vicinity of the proposed project.
- **Regional impacts** would occur on surrounding lands and/or in adjacent communities.

3.2.3 Intensity

Intensity is a measure of the severity of an impact. The intensity of the impact considers whether the effect would be negligible, minor, moderate, or major.

- **Negligible** impacts would not be detectable and would have no discernible effect.
- **Minor** impacts would be slightly detectable, but would not be expected to have an overall effect.
- **Moderate** impacts would be clearly detectable and could have an appreciable effect.
- **Major** impacts would have a substantial, highly noticeable effect.

Federally Listed Species

The Endangered Species Act (ESA) defines the terminology used to assess impacts to listed species. Because this EA also doubles as a Biological Assessment (BA) to initiate formal consultation with the USFWS under section 7 of ESA, the following ESA terminology will be used to describe impacts to the federally endangered San Francisco garter snake and the federally threatened California red-legged frog.

- **No effect:** When a proposed action would not affect a listed species or designated critical habitat.
- **May affect / is not likely to adversely affect:** Effects on special status species are discountable (i.e., extremely unlikely to occur and not able to be meaningfully measured, detected, or evaluated) or are completely beneficial.
- **May affect /is likely to adversely affect:** When an adverse effect to a listed species may occur as a direct or indirect result of proposed actions and the effect either is not discountable or is completely beneficial.

3.2.4 Type of Impact

Impacts were evaluated in terms of whether they would be beneficial or adverse.

- **Beneficial impacts** would improve resources/conditions.
- **Adverse impacts** would deplete or negatively alter resources/conditions.

Impacts were also evaluated in terms of whether they would be direct or indirect.

- **Direct impacts** would be caused by an action and occurs at the same time and place.
- **Indirect impacts** are effects that are later in time or farther removed in distance, but still reasonably foreseeable.

3.2.6 Significance

Impacts to natural resources considered significant are those that would:

- Violate any applicable environmental law or regulation designed to protect wildlife, fisheries, plant species, or habitat areas;
- Affect a special status species or cause a net change to the habitat of the species;
- Change the ability of any resident or migratory fish or wildlife species to move;
- Cause measurable changes in species composition or abundance of a community with special status;
- Cause direct or indirect damage to geologic or hydrologic resources or processes, or increase the risk related to geologic hazards.

Impacts to cultural resources considered significant are those that would:

- Conflict with resource protection measures established by local, state, or federal regulatory programs;
- Cause direct or indirect adverse effects to prehistoric or historic archaeological sites listed or eligible for listing on the National Register of Historic Places or the California Register of Historic Resources, or that contribute to a National Historic Landmark District;
- Interfere with established recreational, educational, and scientific uses of the project site;
- Disturb any human remains.

Project related impacts to visitor use and experience would be significant if

- Visitor attendance was estimated to decrease in the long-term;
- If the type of uses available to visitors would be adversely altered resulting in a long-term, decrease of visitor enjoyment.

3.3 Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations for implementing NEPA requires the assessment of cumulative impacts in the decision-making process for federal actions. A cumulative impact is described in the Council on Environmental Quality, Regulation 1508.7, as follows:

A “cumulative impact” is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Cumulative impacts are considered for both the Action Alternative and the No Action Alternative. Cumulative impacts were determined by combining the effects of the alternative with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other past, ongoing, or reasonably foreseeable future actions within the vicinity of the project site, which includes portions of the City of Pacifica surrounding the Project Area to the north, east and south. The City of Pacifica and the City of San Francisco Planning Departments

and Departments of Recreation and Parks provided the following information; cumulative impacts are then evaluated per resource for each impact topic addressed in this chapter.

General Area/Pacifica

The California Department of Transportation (Caltrans) has proposed the widening of State Highway 1 from Westport Avenue to Fassler Avenue near Rockaway Beach. The proposed widening runs parallel but not adjacent to Mori Point. Caltrans has not proposed a specific plan, timeline or budget for the project. The Mori Point Restoration and Trail Plan will provide optimal environmental benefits for natural resources and visitors within the vicinity of the proposed widening.

Adjacent Lands

South of Mori Point, the City of Pacifica owns and manages Calera Creek as part of the city's tertiary water treatment system. The Mori Point Restoration and Trail Plan will enhance the city's efforts at Calera Creek by protecting adjacent habitat and prohibiting any activity that would adversely impact the quality of the creek.

The Peebles Atlantic Development Corporation recently acquired the property on either side of Calera Creek. Peebles has not submitted a formal development plan to the City of Pacifica. Opportunities for trail connections to Mori Point have been discussed. The Mori Point Restoration and Trail Plan will ensure a trail connection from the Sea Wall, through Mori Point, to locations south.

The Mori Point Restoration and Trail Plan will complement and advance the City of San Francisco's Significant Natural Resources Management Plan for the Sharp Park Golf Course and Laguna Salada Resource Enhancement Plan. The San Francisco Recreation and Parks Department regularly drains the wetlands adjacent to the NPS property to water the Sharp Park Golf Course. This project will remove invasive vegetation and trees, close excess trails from the levee to Laguna Salada, make other trail improvements, stabilize creek banks and add riparian vegetation, and implement habitat improvement activities for CA red-legged frog and SF garter snake. The Mori Point Restoration and Trail Plan will provide consistent habitat for the California red-legged frog through the construction and maintenance of ponds. The City of Pacifica's sea wall promenade also serves as the CCT connector through Pacifica. The Mori Point Restoration and Trail Plan will ensure an extension through the NPS-managed lands at Mori Point.

On-site

The Mori Point Restoration and Trail Plan will complement and advance the resource enhancement activities approved by the USFWS in 2005 for pond building, site stewardship and public outreach and mosquito control.

3.4 Impairment Analysis

In addition to determining the environmental consequences of the alternatives, NPS Management Policies 2001 requires the analysis of potential effects to determine if actions would impair park resources. Under the NPS Organic Act and the General Authorities Act, as amended, the NPS

may not allow the impairment of park resources and values except as authorized specifically by Congress.

Impairment is an impact that would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact would be more likely to constitute an impairment to the extent that it 1) affects a resource or value whose conservation is necessary to fulfill specific purposes identified in the enabling legislation or proclamation of the park; 2) is key to the cultural or natural integrity of the park or to opportunities for enjoyment of the park; 3) or as identified as a goal in the park's general management plan or other relevant NPS planning document. An impact would be less likely to constitute an impairment to the extent that it is an unavoidable result, which cannot be reasonably further mitigated, of an action necessary to preserve or restore the integrity of park resources or values.

3.3 Regulatory Background

3.3.1 Soils and Geology

NPS Management Policies 2001 state, "The Park Service will preserve and protect geologic resources as integral components of park natural systems. As used here, the term "geologic resources" includes both geologic features and geologic processes. The Service will (1) assess the impacts of natural processes and human-related events on geologic resources; (2) maintain and restore the integrity of existing geologic resources; (3) integrate geologic resource management into Service operations and planning; and (4) interpret geologic resources for park visitors."

3.3.2 Hydrology, Water Quality, Wetlands, and Streams

Federal Clean Water Act

Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into "waters of the United States" without a permit from the U.S. Army Corps of Engineers (USACE). Waters of the United States are broadly defined in USACE regulations (33 CFR 328) to include navigable waterways, their tributaries, and adjacent wetlands. The upper limit of jurisdiction wetlands in non-tidal streams and lakes is defined by the ordinary high-water mark, or the upper boundary of adjacent wetlands, whichever is higher.

The definition of waters of the United States includes wetland areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b). Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may be eligible for one of the Nationwide Permits that require less review than an individual permit. The U.S. Environmental Protection Agency (USEPA) also has authority over wetlands and may override an USACE permit.

Section 401 of the Clean Water Act – The California Regional Water Quality Board (RWQCB) and the U.S. Environmental Protection Agency (EPA) set water quality standards that are ecologically protective of aquatic systems (RWQCB, 1995; EPA, 2000). Water Quality Certification or a waiver from the RWQCB is required before a Section 404 permit becomes valid. The RWQCB also reviews projects for consistency with Waste Discharge Requirements under the state land disposal regulations. In reviewing projects, the RWQCB may consider impacts to waters of the state, and may recommend mitigation for filling of wetlands and other impacts in accordance with the state wetland policy.

Executive Order No. 11900, Protection of Wetlands

Executive Order 11900 was signed by President Carter in 1977, in furtherance of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.), in order to avoid to the extent possible the long and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. The Executive Order, Section 1(a), established a policy of “no net loss” of wetlands. Compensation for wetland impacts may include restoration and/or off-site replacement or enhancement. However, the characteristics of the restored or enhanced wetlands must be equal to or better than those of the affected wetlands.

3.3.3 Vegetation, Wildlife, and Special Status Species

Executive Order 13112, Invasive Species

Executive Order 13112 was signed by President Clinton in 1999, under the authority of the NEPA, as amended (42 U.S.C. 4321 et seq.), Non-indigenous Aquatic Nuisance Prevention and Control Act of 1990, as amended (16 U.S.C. 4701 et seq.), Lacey Act, as amended (18 U.S.C. 42), Federal Plant Pest Act (7 U.S.C. 150aa et seq.), Federal Noxious Weed Act of 1974, as amended (7 U.S.C. 2801 et seq.), Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The purpose of this order is to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause. Section 2.a.2 states that federal agencies shall “(i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them.”

California Coastal Act (Coastal Zone Management Act)

The California Coastal Act (updated January 1, 2005) was enacted by the State Legislature to (a) protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources, (b) assure orderly, balanced utilization and conservation of coastal zone resources taking into account the social and economic needs of the people of the state, (c) maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation

principles and constitutionally protected rights of private property owners, (d) assure priority for coastal-dependent and coastal-related development over other development on the coast, and (e) encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone.

The Act states that (a) environmentally sensitive habitat areas shall be protected against any substantial disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas, and (b) development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would substantially degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Each local government lying, in whole or in part, within the coastal zone shall prepare a local coastal program for that portion of the coastal zone within its jurisdiction. The City of Pacifica approved their Local Coastal Land Use Plan on March 24, 1980.

The Act states that all public agencies and all federal agencies, to the extent possible under federal law or regulations or the United States Constitution, shall comply with the provisions of this division. The California Coastal Commission regulates land uses within the Coastal Zone and issues permits for proposed changes in land use and/or development activities.

Federal Endangered Species Act

The Federal Endangered Species Act of 1973 and Title 16 (implementing regulations) of the United States Code of Regulations (CFR) 17.1 et seq., designate and provide for protection of threatened and endangered plants and animals and their critical habitat. Procedures for addressing federally listed species follow two principal pathways, both of which require consultation with the USFWS, which administers the Act for all terrestrial species. A Section 7 Consultation (Interagency Consultation) involves projects with a federal connection or requirement; typically these are projects where a federal lead agency (i.e. NPS) is sponsoring or permitting the Proposed Project. In these instances, the federal lead agency initiates and coordinates the following steps:

- Informal consultation with USFWS to establish a list of target species.
- Preparation of a biological assessment assessing potential for the project to adversely affect listed species.
- Coordination between State and Federal biological resource agencies to assess impacts/proposed mitigation.
- Development of appropriate mitigation for all substantial impacts on federally listed species.

The USFWS ultimately issues a final Biological Opinion on whether the project would affect the federally listed species. A Section 10(a) Endangered Species Incidental Take Permit may be necessary when the “taking” or harming of a species is incidental to the lawful operation of a project.

Federal Migratory Bird Treaty Act (MBTA)

The Federal Migratory Bird Treaty Act (16 U.S.C., Sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Migratory birds include geese, ducks, shorebirds, raptors, songbirds and many others. The Migratory Bird Executive Order of January 11, 2001 directs executive departments and agencies to take certain actions to further implement the MBTA, and defines their responsibilities of each federal agency taking actions that have, or are likely to make, a measurable affect on migratory bird populations. All project actions must comply with this act; therefore, they cannot result in unauthorized take of migratory birds.

3.3.4 Cultural Resources

National Historic Preservation Act of 1966

The National Historic Preservation Act (PL89-665, 80 Stat. 915, 16 USC Section 470 et seq. and 36 CFR 18, 60, 61, 63, 68, 79, 800) requires agencies to take into account the effects of their actions on properties listed in or eligible for listing in the National Register of Historic Places. The Advisory Council on Historic Preservation has developed implementing regulations (36 CFR 800), which allow agencies to develop agreements for consideration of these historic properties. In June 1992, the NPS, State Historic Preservation Officer, and the Advisory Council on Historic Preservation entered into a programmatic agreement regarding operation and maintenance activities within the GGNRA.

Archeological Resources Protection Act of 1979

This act (PL 96-95, 93 Stat. 712, 16 USC Section 470aa et seq. and 43 CFR 7, subparts A and B, 36 CFR) secures the protection of archeological resources on public or Indian lands and fosters increased cooperation and exchange of information between private, government, and the professional community in order to facilitate the enforcement and education of present and future generations. It regulates excavation and collection on public and Indian lands. It requires notification of Indian tribes who may consider a site of religious or cultural importance prior to issuing a permit.

3.3.5 Public Safety

NPS Management Policies (Chapter 8.2) state that “The National Park Service will make reasonable efforts to provide for the protection, safety, and security of park visitors, employees, concessionaires, and public and private property and to protect the natural and cultural resources entrusted to its care.”

3.3.6 Air Quality

The NPS has a responsibility to protect air quality under both the 1916 Organic Act and the Clean Air Act. NPS Management Policies 2001 state, “The Service will seek to perpetuate the

best possible air quality in parks to (1) preserve natural resources and systems; (2) preserve cultural resources; and (3) sustain visitor enjoyment, human health, and scenic vistas. Vegetation, visibility, water quality, wildlife, historic and pre-historic structures and objects, cultural landscapes, and most other elements of a park environment are sensitive to air pollution and are referred to as ‘air quality- related values.’ The Service will assume an aggressive role in promoting and pursuing measures to protect these values from the adverse impacts of air pollution. In cases of doubt as to the impacts of existing or potential air pollution on park resources, the Service will err on the side of protecting air quality and related values for future generations.”

3.3.7 Visitor Use and Recreation

NPS Management Policies (Chapter 8.6) state that “The National Park Service will make reasonable efforts to provide for the protection, safety, and security of park visitors, employees, concessionaires, and public and private property and to protect the natural and cultural resources entrusted to its care”.

3.3.8 Noise

NPS Management Policies 2001 and Director’s Order #47, Sound Preservation and Noise Management mandate parks to preserve the natural soundscape associated with national park units. Management Policies state “The Service will take action to prevent or minimize all noise that, through frequency, magnitude, or duration, adversely affects the natural soundscape or other park resources or values, or that exceeds levels that have been identified as being acceptable to, or appropriate for, visitor uses at the sites being monitored.”

3.3.9 Visual Resources

The protection of aesthetic values is addressed in the NPS Natural Resource Management Guidelines (NPS-77). These NPS Guidelines state: “Protection of aesthetic values is not a program in itself but is an element of most natural resource management programs. It may be argued that aesthetics is the over-arching principle that unites the various management strategies discussed in this Guideline. Our current visitors and the future generations for which we are managing parks “unimpaired” should be able to perceive the same objects (or the same types of objects)--whether animate or inanimate--and processes in the same contexts that existed when the park was established.”

NPS Management Policies identify qualities such as natural quiet, solitude, space, scenery, a sense of history, sounds of nature, and clear night skies that have received congressional recognition and are important components of people’s enjoyment of parks. These NPS Management Policies use the terms resources and values to mean the full spectrum of tangible and intangible attributes for which parks have been established and are being managed.

(1:3) NPS Management Policies also make numerous references to aspects of aesthetics as central issues considered in resource management. It includes, under the natural resources and values that the National Park Service must protect, “aesthetic values, such as scenic vistas, natural, quiet, and clear night skies.”(4:1) “The National Park Service will cooperate with park

neighbors and local government agencies to seek to minimize the intrusion of artificial light into the night scene in parks with natural dark, recognizing the part that darkness and the night sky play in the overall visitor experience. In natural areas, artificial outdoor lighting will be limited to basic safety requirements and will be shielded when possible.” (4:18-19)

3.4 Geology and Soils

3.4.1 Affected Environment

3.4.1.1 Geology and Slope Stability

The Mori Point site is located on the Pacific Coast near the base of the western foothills of the Santa Cruz Mountains in the Coast Range Geomorphic Province of Central California. The site consists of a steep east-west trending ridge between Highway 1 on the east and the Pacific Ocean shoreline on the west. Elevations range from a high of approximately 335 feet atop the west end of the ridge to a low of approximately seven feet above sea level in the north-central part of the site. The coastline is marked by a steep cliff that rises approximately 100 feet above a narrow sandy beach.

The Mori Point site is underlain by bedrock materials, alluvial soils, colluvium, slope wash, and miscellaneous fill. Bedrock in the area consists of Franciscan complex rocks of upper Jurassic to Cretaceous age (140 to 65 million years old) (Wagner et al., 1990, Jennings, 1977). These rocks are extremely diverse and deformed and generally lie in a belt along the eastern side of the San Andreas Fault, which is located approximately two miles northeast of the site. The site is located on a wedge of Franciscan greenstone between the San Andreas and the Pilarcitos Faults, the latter of which is located approximately 1.6 miles to the southwest. The greenstone bedrock at the site is highly fractured and weathered to depths of 50 feet or more. Weathered bedrock on the site is visible at the surface in a number of road cuts on the ridge. The weathered greenstone is fractured and jointed, and a brownish-red color. Fresh dark green bedrock can be seen in the surf zone on the western edge of the site and in the deep road cut along Highway 1.

The dominant geologic structure in this area is the active San Andreas Fault system, the main trace of which trends northwest/southeast through Pacifica, San Bruno, and Daly City, northeast of the site (Wagner et al., 1990, Jennings, 1977). This major fault has been the source of substantial seismic activity. There is no evidence of active faults within the project site, but strong ground shaking could occur during a moderate to major earthquake within the general vicinity.

Areas of existing and/or potentially unstable slopes at the site include: the sea cliff area where active erosion is occurring; a large active landslide on the north-facing slope in the eastern portion of the site; other smaller areas of landslide or soil creep; and areas of soil disturbance such as historic road cuts, quarries, and building pads. The broad swale in the center of the northern slope of the ridge appears to contain several generations of fill, but there is no evidence of landslide activity in this area.

Earth System Consultants (ESC) estimated that the Mori Point coastline has eroded

approximately 40 feet in the 37 years preceding their 1978 study (ESC, 1978). This equates to an average coastal retreat rate of approximately 1.1 feet per year. ESC states that erosion and instability along the sea cliff is a naturally occurring process, which is virtually impossible to mitigate.

The active landslide on the north-facing slope on the eastern portion of the site appears to have experienced several generations of movement. Initial movement probably occurred prior to development of the adjacent subdivision (ESC, 1978). Later movements appear to have been in the form of slow, progressive failures resulting in the distress that is evident in the retaining wall along the south side of Mori Road and the relatively fresh topographic scarps that are evident on the landslide surface. ESC noted distress in the retaining wall along Mori Road during their 1978 study – how much change in damage to the retaining wall relative to the present condition is not known. ESC studied this landslide extensively in 1978 and concluded the landslide is a relatively slow progressive failure in the highly plastic silty clay soil. Their analysis indicated that the slide area is unstable and especially sensitive to groundwater levels (hydrostatic and seepage forces), changes in loading conditions (e.g., cuts and fills in the slide area), and seismic forces. They also concluded that there is a high potential for seismically induced landslides or slope failures in this area and other mapped landslide areas, as well as very steep slopes or areas of creeping soil. In summary, localized landslides, deep soil creep, and coastal erosion are the principal forms of slope instability at the project site.

3.4.1.2 Soils

Subsurface investigations at the Mori Point site indicate soils consisting predominantly of silty clay overlying weathered Franciscan greenstone bedrock. The soil thickness across the site varies from zero to as much as 69 feet. South of the Mori Road, soils of the upland region consist of dark brown to reddish-brown silty clay to depths from 13 to greater than 50 feet (ESC, 1978). The greatest soil thickness was observed underlying active landslide areas. To the north of Mori Road, soil borings reveal 1.5 to 3.0 feet of shallow fill over relatively soft and saturated alluvial soils consisting of organic-rich, silty clay, which extend to a depth of about eight feet. The wet, organic-rich soils encountered at this location represent sediments deposited in a marsh – an environment that currently exists in this area of the site.

Extensive grading has altered the appearance and topography of the site over a long period of time. Disturbed areas appear to be the result of historic grading. All other areas appear to have been affected by soil creep and other forms of natural slope instability. Many of the low-lying areas of disturbed or unstable ground are marked on the surface by relatively thick growth of low vegetation.

3.4.1.3 Seismicity

The project site is located in a seismically active region. Three major active faults lie near the site: the San Andreas Fault (about 7.0-miles east), the North San Gregorio Fault (about 2.0-miles west), and the Hayward Fault (about 30-miles east). In the long-term, it is likely that the project site would experience periodic minor earthquakes and possibly a major earthquake (Moment magnitude [Mw] greater than 6.7 [California Division of Mines and Geology, 1996]) on one or

more of these nearby faults. Numerous earthquakes have been recorded in the region in the past, the largest of which was the 1906 San Francisco Earthquake (Mw of 7.9), which occurred on the San Andreas Fault. The most recent earthquake to affect the Bay Area was the Loma Prieta Earthquake of October 17, 1989, with an Mw of 6.9, in the Santa Cruz Mountains approximately 57 miles from the site.

The Working Group on California Earthquake Probabilities at the U.S. Geologic Survey (USGS 1999) predicted a 62-percent probability of a Mw of 6.7 or greater earthquake occurring in the San Francisco Bay Area by the year 2032. More specifically, the estimated 30-year probabilities of a Mw of 6.7 or greater earthquake for the Hayward-Rodgers Creek, San Andreas, and San Gregorio Faults are 27, 21, and 10 percent, respectively. Historically, ground surface displacements closely follow the trace of geologically young faults. The project site is not located within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no known active or potentially active faults exist on the site. Therefore, the risk of surface faulting is very low (Treadwell & Rollo, Inc. 2003).

Large earthquakes of the type likely to occur during the life of the project may be expected to cause very strong ground shaking at the site. This shaking can result in ground failure such as that associated with soil liquefaction (a phenomenon whereby unconsolidated and/or near saturated soil loses cohesion and is converted to a fluid state as a result of severe ground shaking), lateral spreading, seismically induced densification of natural or fill soils, and landsliding. Settlement caused by seismic densification may be especially noticeable where thick bodies of poorly compacted fill occur. Ground shaking and damages may be intensified within fill areas.

3.4.2 Environmental Consequences

3.4.2.1 *Alternative 1*

Short-term direct and indirect adverse impacts due to increased potential for erosion and sediment transport could occur during habitat restoration (soil decompaction, revegetation, and pond construction), removal of placed fills and debris, trail construction, removal, and improvements, erosion fixes, berm removal, boardwalk/bridge construction, and site improvements. Much of the proposed grading would include recontouring and/or creating slopes. Slope stability analysis would generally be required for cut, fill, and natural slopes whose slope gradient is steeper than two horizontal to one vertical (2:1), and on other slopes that possess unusual geologic conditions such as perennially or seasonally saturated conditions, contacts between fill and natural subsurface lithologies (e.g., fill on bedrock) or evidence of prior landslide activity. These potential short-term construction-related impacts would be local and regional, and minor. Long-term adverse impacts may result from differential settlement occurring in areas of filling and regrading, especially where soils are underlain by artificial fill. Differential settlement could activate landsliding, damage structure foundations adjacent to the project site, and cause settlement in trails and roads.

The California Geological Survey would provide additional policies and criteria to guide GGNRA in evaluating and mitigating seismic hazards. Identifying and mitigating seismic

hazards as part of the Mori Point land use planning processes would reduce the threat to public health and safety and minimize the loss of life and property. In the future, a geotechnical engineer would be retained to review the 1978 geotechnical investigation report and complete a site reconnaissance visit to evaluate the need for any further field studies at the project site in light of proposed project actions within Area A. The geotechnical engineer should also provide an assessment of the risks associated with active landslides at the site, along with recommendations for treatments if appropriate.

Mitigation Measure - GGNRA would prohibit construction activities in any site area with seismic hazards until geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development/restoration plans.

Long-term indirect beneficial impacts due to reduced erosion and sedimentation are anticipated from the following project actions: soil decompaction and revegetation, removal of placed fills, trail construction, removal, and improvements, erosion fixes, berm removal, and boardwalk/bridge construction. Additionally, changes in visitor use patterns resulting from guided use on appropriately constructed trails and limited use in sensitive areas would reduce erosion and sedimentation. These beneficial impacts are local and regional, and minor to major.

Cumulative Impacts

Neither the proposed action nor the cumulative projects would increase the likelihood or intensity of seismic activity at Mori Point, or the risk of other geologic hazards such as settlement or landsliding. All trail and drainage improvements completed in historic and landslide prone areas at Mori Point would be completed in a fashion that should actually reduce landslide hazard. At a minimum, there would be no change in the probability of landsliding. Most seismic and geologic hazards are unpredictable and unavoidable, and would continue to affect visitors and surrounding residents regardless of the proposed actions. However, development actions at Mori Point and the cumulative projects, would eventually lead to a greater number of people visiting the area and, therefore, in the event of an earthquake or landslide, more people could be exposed to injury and property could be damaged. Long-term, the project should reduce future degradation of soils and geologic resources.

The potential cumulative risk of additional exposure to seismic and geologic hazards as Mori Point's visitor and resident population increases is not considered significant. Cumulative soil erosion impacts would be offset by implementation of the Best Management Practices (Appendix E).

Conclusion

With incorporation of the above mitigation, potential adverse impacts to soil and geologic resources would be local, short and long-term, indirect, minor, and reduced to less-than significant levels. In contrast, the proposed project would result in local, short and long term, direct and indirect, and major beneficial impacts. The proposed project would have net beneficial impacts to the quality of soil and geologic resources.

3.4.2.2 *Alternative 2*

Under this alternative, in the long-term, less indirect adverse impacts from erosion and sedimentation are expected. This is a result of greater restrictions on trail use for horses and bikers, which are thought to have a greater impact than pedestrians.

Conclusion

With incorporation of the mitigation identified in Alternative 1, all potential adverse impacts to soil and geologic resources would be local, short and long-term, minor, indirect, and reduced to less-than significant levels. Beneficial impacts would be local, short and long-term, major, direct and indirect. Cumulative impacts would be as described under Alternative 1.

3.4.2.3 *Alternative 3*

Under Alternative 3, all trails would be designated multiple-use. Therefore, potential impacts to soil and geologic resources would be somewhat greater than those described under Alternative 1, due to increased trail width and construction zone. In the long-term, more indirect adverse impacts from increased levels of erosion and sedimentation are expected due to increased use by bikers and equestrians in steep and eroding slopes.

Conclusion

With incorporation of the mitigation identified in Alternative 1, all potential adverse impacts to soil and geologic resources would be local, short and long-term, minor, indirect, and reduced to less-than significant levels. Beneficial impacts would be local, short and long-term, major, direct and indirect. Cumulative impacts would be as described under Alternative 1.

3.4.2.4 *Alternative 4 (No Action Alternative)*

Under the No Action Alternative the proposed project would not be implemented. The No Action Alternative would not generate any new or enhanced geologic, soil, and seismic safety impacts. The accelerated erosion, both coastal bluff and steep uplands, would continue due to historic and existing site disturbance, most notably non-designated trail development.

Conclusion

The No Action Alternative would result in local and regional, short and long-term, major, direct and indirect adverse impacts to soil and geologic resources. The No Action alternative would not result in beneficial impacts to soil and geologic resources. Cumulative impacts would be as described under the Preferred Alternative.

3.4.2.5 *Impairment*

The proposed project is not expected to produce major, adverse impacts to a resource or value whose conservation is: 1) necessary to fulfill specific purposes identified in the establishing legislation of the GGNRA; 2) key to natural or cultural integrity of the park; or 3) identified as a goal in GGNRA's General Management Plan or other relevant National Park Service planning documents. Therefore, the proposed project is not expected to result in impairment to soil and

geologic resources.

3.5 Hydrology and Water Quality

3.5.1 Affected Environment

3.5.1.1 Site Hydrology

The climate at Mori Point and the surrounding area is commonly referred to as Mediterranean, a climate characterized by wet winters and dry summers. The climate along the central California coast is moderated by the Pacific Ocean and is characterized by even temperatures, frequent heavy fog, and prevailing winds from the west or northwest. Temperatures display a wider range further inland, away from the moderating effects of the ocean. Temperatures and rainfall are also influenced by elevation and local topography.

Precipitation in the San Francisco Bay Area is seasonal with over 80 percent of the annual rainfall occurring between the months of November and March. Very little precipitation occurs from June through September. The long-term mean annual precipitation for the project site is approximately 19 inches (Rantz, 1971), though annual rainfall ranges widely.

Numerous seasonal drainage courses, originating from site uplands, exist throughout the project site. A freshwater wetland occupies the northwest portion of the site immediately adjacent to Mori Road. Apart from limited perennial flow in the Mori Road drainage ditch, flow in the site's drainages is likely ephemeral – occurring only during rainfall events. Most watercourses have small contributing drainage areas and have been highly modified, most notably by historic excavation and grading activities, trail/road development, and off-road vehicle use. As a result, most watercourses are interrupted at some point along their length, resulting in unnatural ponding, concentrated run-off and excessive erosion.

Off-road vehicle activity on the site has resulted in the de-vegetation of much of the ridge and flat graded pads. Rills or gullies have formed on the steeper slopes as a result of concentrated run-off. In addition, off-road vehicle use has led to the loss of soil, compaction of remaining soil, and a rise in the amount of runoff. Permeability of surface materials has been reduced, which results in accelerated runoff.

3.5.1.2 Groundwater Resources

During site subsurface investigations in 1978, groundwater was encountered at depths ranging from zero to 48 feet below the ground surface (ESC, 1978). The shallowest groundwater conditions exist at the marsh area north of Mori Road (lowest site elevations), with depth to groundwater levels generally increasing as surface elevations increase across the central portion of the site. Groundwater depths are greatest along the ridge crest. Shallow groundwater conditions also exist in the vicinity of natural spring or wetland areas at the base of the central swale. Groundwater also emerges at perennial seeps located at the toe of the large central landslide along Mori Road. The surface flow resulting from these seeps drains to the west along a roadside ditch – ultimately discharging to the marsh area in the northwest corner of the site.

3.5.2 Environmental Consequences

3.5.2.1 *Alternative 1*

Excavation without proper design may yield slopes that are temporarily more prone to erosion and/or landsliding, creating a potentially short-term adverse impact on downstream areas and water quality. To mitigate this potential impact, the following mitigation measures will be implemented.

Mitigation Measures:

- Construction will be limited to the dry-weather months to the greatest extent practicable.
- Areas disturbed by equipment or vehicles will be rehabilitated as quickly as possible to prevent erosion, discourage the spread of nonnative plants and address soil compaction.
- Appropriate design would drain surface water from the trail to avoid ponding and development of soft, muddy surfaces that can lead to soil degradation and water quality impacts.
- Erosion and sediment control measures would be implemented where project actions could leave soils exposed to runoff prior to revegetation. Erosion control measures would be installed wherever necessary during construction to eliminate the potential for sediment discharge into stormwater, wetlands, and creeks.

Implementation of the mitigation measures and additional Best Management Practices in Appendix E are expected to minimize these short-term impacts so that they would be local and minor, especially when considering the net benefits described below.

Reintroducing properly functioning and integrated surface channels and wetlands to Mori Point would create features that would slow water flow and provide areas for temporary storm water detention. In addition to reducing peak flow magnitudes, detaining surface water runoff would provide the opportunity for on-site sediment deposition, thereby improving water quality. The trail rehabilitation and restoration efforts under the Preferred Alternative would reduce sediment and pollutant discharges to the northern wetland and Pacific Ocean. There would be no material change in the total volume of freshwater discharge to the existing northern freshwater marsh. These beneficial impacts would be local to regional and moderate to major.

Cumulative Impacts

Neither the proposed action nor the cumulative projects would increase the likelihood of adverse impacts to the water quality or hydrology at Mori Point. Work onsite would be completed in a manner protective of water quality and hydrology and the Preferred Alternative would improve hydrology in the long-term. Work completed as part of the City of San Francisco's Significant Natural Resources Management Plan for the Sharp Park Golf Course and Laguna Salada Resource Enhancement Plan would improve trails that impact water quality, stabilize creek banks and improve sensitive species habitat. These two projects could have local beneficial cumulative impacts.

Although the Mori Point project does not introduce any demands on water supply beyond those that currently exist for natural resources, the cumulative projects would introduce a greater population to the area and place greater demands for water resources over time. The demand for irrigation water by the cumulative projects could be alleviated by landscaping with drought tolerant plants and irrigating with recycled water. Potable water demands could be reduced through implementation and enforcement of conservation measures. With the regional use of recycled water by the cumulative projects, no significant cumulative effects would be expected; rather, the cumulative effects would be considered beneficial as less treated wastewater would be discharged to the Ocean, and less potable water would be consumed.

The cumulative projects would also likely lead to an increase in impervious surface area mostly as a result of created/widened roads and housing developments. If unmitigated, the net effect would be increases in storm runoff rates and potential urban contaminants. Again, the restoration and trail improvement components of the Mori Point project would yield net reductions in runoff and improved water quality (esp., reduced sediment mobilization and transport). If constructed pursuant to existing environmental codes and standards of practice (e.g., erosion control plans, stormwater pollution prevention plans, water quality BMPs) the cumulative impacts from all area projects would be offset by implementation of the Best Management Practices (Appendix E), resulting in no significant cumulative impact on water resources.

Conclusion

Potential adverse impacts to hydrologic and water quality conditions would be local, short-term, direct and indirect, minor, and reduced to less-than significant levels. In contrast, beneficial impacts would be local and regional, short and long-term, direct and indirect, and moderate to major. The proposed project would result in net benefits to water quality and hydrologic resources.

3.5.2.2 Alternative 2

All of the Action Alternatives would result in similar changes in site hydrologic characteristics. Because there are only slight differences in the degree and magnitude of change between Action Alternatives, the resulting effect on hydrologic conditions (e.g., evapotranspiration rates, mean annual runoff, depth to groundwater, peak storm flow magnitudes, etc.) would not vary substantially between alternatives.

Conclusion

Differences in impacts to hydrology and water quality between Alternative 2 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 2. Mitigation identified in Alternative 1 also applies to Alternative 2. Cumulative impacts would be as described under the Preferred Alternative.

3.5.2.3 Alternative 3

All of the Action Alternatives would result in similar changes in site hydrologic characteristics.

Because there are only slight differences in the degree and magnitude of change between Action Alternatives, the resulting effect on hydrologic conditions (e.g., evapotranspiration rates, mean annual runoff, depth to groundwater, peak storm flow magnitudes, etc.) would not vary substantially between alternatives.

Conclusion

Differences in impacts to hydrology and water quality between Alternative 3 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 3. Mitigation identified in Alternative 1 also applies to Alternative 3. Cumulative impacts would be as described under the Preferred Alternative.

3.5.2.4 Alternative 4 (No Action Alternative)

Under the No Action Alternative, no wetland, aquatic, or riparian habitat restoration activities would occur. Existing roads and trails would not be improved and would remain in their current locations. Because no substantial changes would be made in topography, vegetation and impervious surfaces, there would be no impact on surface water and groundwater hydrology or water quality. In turn, there would be no appreciable change in groundwater levels, surface water base flows, storm runoff, or water quality in the project area due to No Action Alternative activities. However, under the No Action Alternative, the current hydrological problems described under affected environment would persist, including unnatural ponding, concentrated run-off, and excessive erosion.

Cumulative Impacts

The No Action Alternative would not involve any actions to improve hydrology at the Mori Point. Over time, continued erosion due to human use of the site will continue. The cumulative projects would likely lead to an increase in impervious surface area mostly as a result of created/widened roads and housing developments. If unmitigated, the net effect would be increases in storm runoff rates and potential urban contaminants. When combined with the cumulative projects, these actions could cause adverse cumulative impacts.

Conclusion

The No Action Alternative would result in the continuation of baseline conditions, which have local and regional, short and long-term, major, direct and indirect adverse impacts to hydrology and water quality conditions. The No Action alternative would not result in beneficial impacts to hydrology and water quality conditions.

3.5.2.5 Impairment

The proposed project is not expected to produce major, adverse impacts to a resource or value whose conservation is: 1) necessary to fulfill specific purposes identified in the establishing legislation of the GGNRA; 2) key to natural or cultural integrity of the park; or 3) identified as a goal in GGNRA's General Management Plan or other relevant National Park Service planning documents. Therefore, the proposed project is not expected to result in impairment to hydrology or water quality.

3.6 Biological Resources

Biological resources are analyzed according to wildlife, vegetation and native plant communities, wetlands and special status species. Because special status species are analyzed separately, the wildlife section does not include these species. Analysis of special status species known to occur on site include the federally listed San Francisco garter snake, the federally threatened California red legged frog, raptors and migratory birds, and the San Francisco forktail damselfly. Special status species that have not been documented on site, but have the potential to occur in Mori Point habitats are also analyzed. These species include the western pond turtle, the California horned lizard, the dusky-footed woodrat, the Tomales isopod, Ricksecker's water scavenger beetle and Leech's skyline diving beetle and the American badger.

3.6.1 Wildlife

3.6.1.1 Affected Environment - Wildlife

The wide range of vertebrates found at Mori Point reflects the site's diverse habitats. Coastal scrub, coastal prairie grasslands, rocky coastline, ponds and riparian areas support a variety of resident and migratory wildlife. Although a complete formal fauna inventory has not been conducted, local naturalists and wildlife enthusiasts provided a list of wildlife sightings at Mori Point. The reported fauna include 115 birds, 12 reptiles, 8 amphibians, and 23 mammal species.

The majority of vertebrates recorded at Mori Point are resident and migratory birds (115 species). The abundance of species observed indicates the important role that Mori Point plays within the migratory flight path for many raptors and songbirds. During bird migration, many species utilize Mori Point and other large fragmented areas along the San Francisco Peninsula as a place to shelter and hunt. White-tailed kites, red-tailed hawks, and red-shouldered hawks can often be seen stalking small prey, such as California voles, deer mice, and young brush rabbits. In addition to many birds of prey, Mori Point offers a rocky coastline where shore birds and marine birds feed.

Mori Point provides habitat for several sensitive species. The federally endangered San Francisco garter snake and federally threatened California red-legged frog use seasonal ponds, freshwater seeps and upland coastal scrub and grassland habitat for feeding, reproduction, and shelter. The drainage ditch along Mori Road provides breeding habitat for the larval stage of the locally rare San Francisco forktail damselfly.

Throughout Mori Point, three species of terrestrial salamanders can be found. Of the three species, the California slender salamander is the most abundant. This small wormlike salamander inhabits loose soil in areas where surface water is not present. The two other species observed at Mori Point are the arboreal and Monterey/yellow-eyed intergrades salamander.

Although the majority of Mori Point's mammals are small rodents, mule deer and gray foxes have also been seen. Mule deer have been reported using the site as a corridor between adjacent open space areas. The gray fox is believed to have denned within the willows next to the

seasonal ponds.

Very little is known about the diversity of invertebrates at Mori Point. The GGNRA plans to conduct a general census to determine the variety of invertebrates throughout the habitat types at Mori Point, with assistance from local state and community colleges.

Mori Point is also home to many non-native wildlife species, including feral cats and other wildlife commonly associated with suburban lands.

3.6.1.2 Environmental Consequences - Wildlife

Alternative 1 – Wildlife Impacts

Site-wide Management and Long-term Stewardship Actions may result in short-term direct adverse impacts to wildlife, including possible harm or mortality to small or immobile wildlife species, such as small mammals, reptiles, amphibians and invertebrates due to strikes or crushing. However, these impacts would be temporary and/or infrequent, local and minor.

Site-wide Management Actions (trail construction, etc.) may result in long-term direct adverse impacts to wildlife from the permanent removal of 2% (2.7 acres) of habitat, and short-term direct adverse impacts to wildlife from the temporary impact to 15% (16.6 acres) of the site (Table 7). However, these impacts to habitat are considered to be minor because they primarily occur locally in currently disturbed habitat (existing trails, fill, debris and concrete pads, etc.) which is largely devoid of vegetation, and is thus unlikely to support a high diversity of wildlife species. It is anticipated that 13% (6.1 acres) of the Coyote Brush vegetation type would be adversely affected in the short-term, and 1% (0.7 acres) would be adversely affected in the long-term. Because the Coyote Brush vegetation alliance is the most abundant on-site, it is anticipated that wildlife species occupying impacted areas would have a sufficient amount of alternative habitat available to them during and following project activities. Adverse impacts to wildlife are considered local and minor, especially when considering the net beneficial impacts to wildlife.

Site-wide Management Actions may result in short-term indirect adverse impacts due to inadvertent habitat removal and degradation (i.e., from dust, vegetation trampling, erosion, sedimentation) and wildlife disturbance resulting in interrupted feeding and breeding activities and/or site abandonment (i.e., due to equipment noise, vibration, trampling, disturbance from crew movement, staging), during the following activities: soil decompaction, invasive species removal, planting, fill and debris removal, non-designated trail removal, trail construction, hydrological repairs, and erosion repair activities. To reduce the impact from construction, trees or shrubs encroaching on access roads will be trimmed back to allow vehicles to pass by without going off the road and into habitat. All material stockpiling and staging areas will be located within project right of ways in non sensitive areas, or at designated disturbed/developed areas outside of design construction zones.

The implementation of project elements will be conducted in incremental phases (as feasible) by region to ensure that disturbance to habitats and species is restricted to small and/or spatially separate portions of the site at any one time. These areas will be defined in coordination with the

NPS Aquatic Ecologist. The implementation of site improvements may also result in short-term indirect disturbance of wildlife species due to increased visitor use around site improvements after installation.

Site-wide Management Actions and Stewardship Actions may result in long-term indirect adverse impacts to wildlife from ongoing activities including trail use and maintenance, invasive species removal, revegetation, trash removal, or monitoring. However, these impacts are anticipated to occur infrequently, and would be local and minor, especially when considering the net benefits to wildlife described below.

Site-wide Management Actions would result in long-term, direct beneficial impacts. Locally, the project would result in a net increase of over 13.3 acres of native habitat due to soil decompaction, planting, erosion repair, non-designated trail removal, and trail construction and improvement. Additionally, long-term stewardship actions such as invasive species removal and trash pick up would improve habitat throughout the 110 acre site. Restored habitats at Mori Point would provide food and shelter for resident and non-resident wildlife alike. These beneficial impacts to wildlife would be local to regional and minor to moderate.

Wildlife would also indirectly benefit from reduced recreational use in sensitive habitats due to the construction of an upgraded trail system that would guide visitor-use along established trails. In this manner, habitat degradation and disturbance to wildlife due to off-trail traffic would be reduced. Hydrologic and erosion repairs, in conjunction with guided visitor use, would reduce erosion and sedimentation, thereby increasing habitat quality for aquatic wildlife species. The hydrological and pond construction work conducted in Special Restoration Areas A and B would result in increased size and connectivity of wetland habitat for wildlife.

Long-term Stewardship Actions would also result in a net indirect benefit to wildlife due to improvements in native habitat species diversity and function from ongoing weed control, revegetation, and monitoring efforts; reduction in threats from predators due to on-going trash removal and site improvements; reductions in off-trail trespass and disturbance from visitors due to well-maintained, marked and signed trails, and increased overall public awareness and support for wildlife conservation due to educational and community programs. These beneficial impacts would be local to regional, and minor to moderate.

Cumulative Impacts

Past regional development projects, including residential, commercial, and transportation-related (i.e. Highway 1) have resulted in habitat fragmentation and disturbance along the Pacifica coast. These projects have limited and constrained habitat to key areas, including Mori Point, where native plant communities and wildlife can still survive and thrive. Additional development projects would further compound this situation. Proposed project activities would temporarily disturb on-site native plant communities and wildlife, particularly combined with the recent site restoration activities from pond construction conducted in 2004-2005, resulting in a temporary cumulative impact to such resources. However, proposed activities would be implemented in phases, limiting the scale and distribution of such impacts. Also, the majority of proposed project actions would occur before most of the future development projects, allowing for

relatively undisturbed on-site habitat as refuge for wildlife species following project implementation. In addition, the overall benefit to native habitats and resident wildlife species following project implementation would result in a cumulative beneficial impact to biological resources, particularly when combined with other habitat and wildlife restoration efforts (weed and tree removal, revegetation, predator and erosion control, and off-leash dog prohibitions) proposed north of the site at Laguna Salada and in the Sharp Park Natural Area.

Conclusion

Alternative 1 would result in short and long-term, direct and indirect, local, and minor adverse impacts to wildlife. With the implementation of the Best Management Practices in Appendix E, impacts would be less-than-significant. In contrast, the proposed project would result in long-term, direct and indirect, local to regional, and minor to moderate beneficial impacts. Although 2.7 acres of habitat would be removed, site restoration actions would restore at least 13.3 acres of habitat, leaving a net increase of 10.6 acres of habitat with a ratio of nearly 1:5 for habitat removed to habitat restored. Overall, the proposed project would result in net benefits to the quantity and quality of wildlife habitat.

Alternative 2 - Wildlife Impacts

The majority of the proposed short-term and long-term activities for Alternative 2 are identical to those proposed for Alternative 1. Therefore impacts from these activities under Alternative 2 would be identical to the impacts described under Alternative 1. However, the trail use designations are more limited under Alternative 2 than under the Preferred Alternative. The trail use designations would result in 2.4 miles of trails that would be “hiker only” as compared to 1.3 miles of hiker-only trails in Alternative 1. This would likely result in less visitor traffic and reduced potential for off-trail trespass by bicycles and horses (or by hikers to avoid bicycles and horses) along the “hiker only” trail segments, thereby reducing the potential for habitat/vegetation trampling, wildlife disturbance, and erosion/sedimentation. This reduction in potential impacts would be most substantial along the Bowl Trail, as this area supports some of the most sensitive wetland and pond habitats on-site, which provide habitat for federally listed species. However, the reduction of these potential impacts under Alternative 2 is not quantifiable.

Conclusion

Differences in impacts to *Wildlife* resources between Alternative 2 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 2. Cumulative impacts would be the same as for Alternative 1.

Alternative 3 - Wildlife Impacts

The majority of the proposed short-term and long-term activities for Alternative 3 are identical to those proposed for Alternative 1. Therefore impacts from these activities under Alternative 3 would be identical to the impacts described under Alternative 1. However, these trail use designations under Alternative 3 would result approximately 3.5 miles of trails that would be designated “multiple-use” as compared to “hiker only” under Alternative 1. This increase in trail use options would likely result in increased potential for off-trail trespass by bicycles and horses

(or by hikers to avoid bicycles and horses) along the Peak Trail, Point Trail, the Coastal Trail Coastal Connector Trail, and the Ridge Trail, thereby increasing the potential for habitat/vegetation trampling, wildlife disturbance, and erosion/sedimentation (particularly in “Special Restoration Area C”, the erosion repair site along the Peak Trail). However, the increase of these potential impacts under Alternative 3 is not quantifiable.

Conclusion

Differences in impacts to *Wildlife* resources between Alternative 3 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 3. Cumulative impacts would be the same as Alternative 1.

Alternative 4 - Wildlife Impacts

Under the “No Action” Alternative (Alternative 4), none of the proposed actions would be implemented within the Project Area. Therefore, no trail construction or removal would occur, and there would be no restoration or improvement of wildlife habitat. As a result, no negative impacts would occur to biological resources from these activities from equipment, vehicle or crewmember disturbances, habitat removal, harm, or mortality. However, impacts to biological resources from continued uncontrolled visitor use along the many non-designated trails, and especially from illegal off-road vehicle use, would continued to result in possible disturbance and mortality to wildlife and special status wildlife, and degradation (from trampling and erosion) to wildlife habitats, native plant communities and wetlands.

Wildlife habitat and native plant communities would remain unchanged initially, but because additional native plant communities might not be restored due to trash/debris removal, weed removal, and planting, no additional benefits to wildlife could be expected or ensured. Over the long-term, the distribution and species composition of wildlife habitats, vegetation and native plant communities would change due to further encroachment by invasive, non-native plant species. Active restoration activities such as soil decompaction and planting would not occur in the Disturbed habitat, and therefore, there would be no net increase in 5.4 acres of native plant communities.

Uncontrolled visitor use and the lack of active habitat restoration would result in the slow loss and degradation of suitable foraging, aestivation, upland, and wetland habitat for California red-legged frog, San Francisco garter snake, and other special status wildlife from ongoing visitor use (non-designated trail development, erosion, trash, invasive plant encroachment, illegal uses such as off-road vehicle and off-road bicycle use). There would be no net benefit to these from pond construction or hydrology connectivity improvements. In addition, without active management, the grassland habitats used for upland aestivation and dispersal for California red-legged frog and San Francisco garter snake, as well as some special status birds, would continue to be lost as converts to scrub habitat over time.

Cumulative Impacts

If the proposed actions did not occur and no habitat restoration or management of the site occurred, potential increased visitation as a result of nearby developments could further impact

resources and there would be no undisturbed on-site habitat as refuge for wildlife species. Combined with the cumulative projects, habitat fragmentation and disturbance would continue and contribute to adverse cumulative impacts.

Conclusion

Alternative 4 may result in long-term, indirect, adverse, local and minor to moderate impacts to *Wildlife* which are anticipated to be less-than-significant.

3.6.2 Vegetation and Native Plant Communities

3.6.2.1 Affected Environment – Vegetation and Native Plant Communities

According to *The Ecological Subregions of California* (Miles and Goudy, 1997), Mori Point is within the Central California Coast Section³, which is typically characterized by hills and valleys in the southern Coast Ranges of California. It is located at the northern end of the Santa Cruz Mountains subsection, which consists of all lands west of the San Andreas Fault south to the Watsonville Plains around Monterey Bay. The climate of this subsection is very mild due to the strong marine influence, and an average annual precipitation varying between 20 to 60 inches. Summer fog is very common.

Specific information about the vegetation communities found at Mori Point was gathered in 2005. Information was collected using the rapid assessment field method as developed by the California Native Plant Society (CNPS). A total of 11 alliances (Figure 13) were identified at Mori Point (Table 2). These 11 alliances, which include Coyote Brush, Purple Needlegrass and California Sagebrush alliances, are comprised of 22 vegetation associations (Table 3; Appendix A). Coyote Brush (47 acres) and Purple Needlegrass (23 acres) are the dominant vegetation alliances found at Mori Point. Four of these vegetation alliances are also considered sensitive plant communities, known or believed to be of high priority for inventory in the California Natural Diversity Database (CDFG 2003): Purple Needlegrass, Red Fescue, California Oatgrass and Arroyo Willow. Wetland habitats are also considered sensitive plant communities (such as Cattail, Small-fruited Bulrush, Rush, and portions of Arroyo Willow alliances), as they are regulated by state and federal agencies; however, these are addressed separately in Section 3.6.1.3 below. Additionally, over 130 species of vascular plants have been documented. Non-native plant species are plants that have been deliberately or accidentally introduced into the area, and are not a part of the region's natural ecosystem. Invasive non-native plant species are of particular management concern at Mori Point as they have the potential to rapidly spread throughout the area, reducing habitat for native flora and wildlife. Individual populations and/or occurrences of a number of targeted non-native invasive plant species have been mapped as part of on-going vegetation management. These species include pampas grass, Cape ivy, ice plant, and a number of shrubs (including French and Scotch brooms and cotoneaster). Due to the urban interface and current rates of ingress by invasive species, it is very likely that without active

³ Following the Forest Service National Hierarchical Framework (McNab & Avers, 1994), which consists of (in order of increasing specificity) Domain, Division, Province, Section and Sub-section.

FIGURE 13. VEGETATION ALLIANCES WITHIN THE PROJECT AREA.

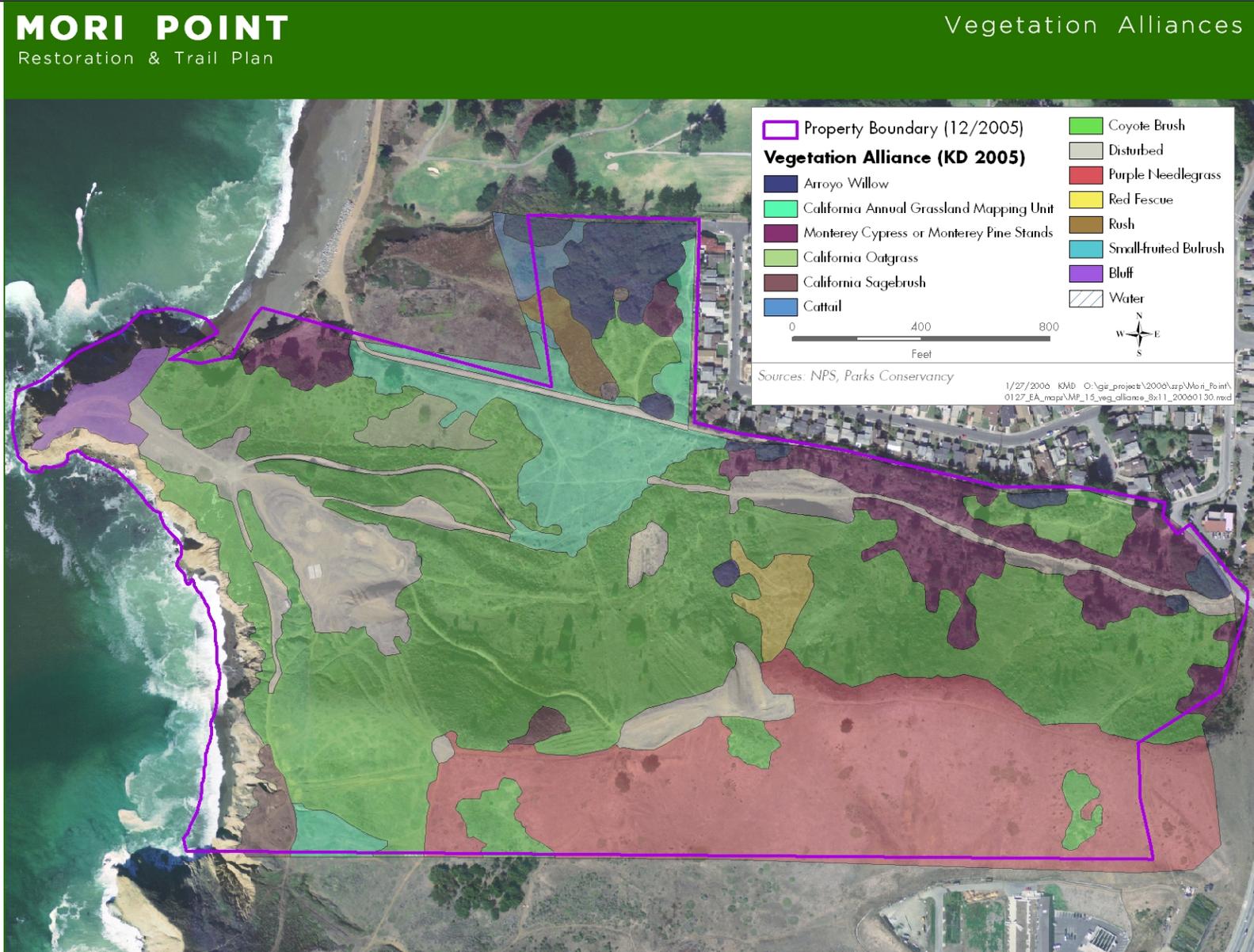


TABLE 2: SUMMARY OF VEGETATION ALLIANCES AT MORI POINT

Alliance (N=Native)	Approximate acreage
Coyote Brush (N)	47.3
Purple Needlegrass (N)	23.4
Disturbed	10.4
Monterey Cypress or Monterey Pine Stands	8.0
California Annual Grassland Mapping Unit	7.4
Arroyo Willow (N)	3.6
Unable to Key (Bluff)	1.3
Red Fescue (N)	1.1
California Sagebrush (N)	1.1
California Oatgrass (N)	1.0
Rush (N)	0.9
Cattail	0.8
Small-fruited Bulrush (N)	0.1
Water	0.1

TABLE 3: SUMMARY OF VEGETATION ASSOCIATIONS AT MORI POINT

Association (-NA indicates that the alliance is listed and that there are no defined associations):	Approximate acreage
Purple Needlegrass - <i>N. pulchra/Baccharis pilularis</i>	23.4
Coyote Brush - <i>B.p. consanguinea/ Artemisia californica/ Toxicodendron/Monardella villosa</i>	15.1
Coyote Brush - <i>B.p. consanguinea/Nassella pulchra</i>	11.8
Disturbed - NA	10.4
Coyote Brush - <i>B.p. /Eriophyllum staechadifolium</i>	9.8
Monterey Cypress or Monterey Pine Stands - NA	8.0
California Annual Grassland Mapping Unit - NA	7.4
Coyote Brush - <i>B.p. consanguinea/Non-native grassland Association (preliminary)</i>	5.9
Arroyo Willow - <i>Salix lasiolepis/Rubus</i>	2.6
Coyote Brush - <i>B.p. consanguinea/Rubus ursinus/Weedy</i>	2.1
Coyote Brush - NA	1.9
Unable to Key - NA	1.3
Red Fescue - NA	1.1
California Sagebrush - NA	1.1
California Oatgrass - NA	1.0
Arroyo Willow - NA	1.0
Rush - <i>Juncus patens</i>	0.9
Typha western herbaceous vegetation	0.8
Coyote Brush - <i>B.p. consanguinea/Annual Grassland Association (preliminary)</i>	0.4
Coyote Brush - <i>B.p. consanguinea/Native Grassland Association (preliminary)</i>	0.4
Small-fruited Bulrush - NA	0.1
Water - NA	0.1

management, the proportion of invasive species at Mori Point would increase. Table 4 is a partial list of invasive species that can be found on site; a map depicting the locations of some invasive non-native plant species noted at Mori Point is located in Appendix A.

TABLE 4. INVASIVE SPECIES NOTED AT MORI POINT.

Common Name	Scientific Name
Bellardia	<i>Bellardia trixago</i>
Mustard	<i>Brassica spp.</i>
Iceplant	<i>Carpobrotus edulis</i>
Poison hemlock	<i>Conium maculatum</i>
Pampas grass	<i>Cortaderia spp.</i>
Cotoneaster	<i>Cotoneaster spp.</i>
Monterey cypress	<i>Cupressus macrocarpa</i>
Scotch broom	<i>Cytisus scoparius</i>
Queen Anne's lace	<i>Daucus carota</i>
Cape ivy	<i>Delairia odorata</i>
Teasel	<i>Dipsacus sativus</i>
Blue-gum eucalyptus	<i>Eucalyptus globulus</i>
Sweet fennel	<i>Foeniculum vulgare</i>
French broom	<i>Genista monspessulana</i>
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Oxalis	<i>Oxalis pes-caprae</i>
Bristly ox-tongue	<i>Picris echioides</i>
Monterey pine	<i>Pinus radiata</i>
Wild radish	<i>Raphanus sativus</i>
Nasturtium	<i>Tropaeolum majus</i>
Periwinkle	<i>Vinca major</i>

3.6.2.2 Environmental Consequences – Vegetation and Native Plant Communities

Alternative 1 – Vegetation and Native Plant Communities Impacts

Most project impacts would occur within disturbed areas that are largely devoid of vegetation. Site-wide Management Actions would result in short and long-term direct adverse impacts to vegetation communities at Mori Point. Over the entire site, only 9% (10.6 acres) of the native plant communities would be temporarily impacted in the short-term and only 1% (1.5 acres) would be permanently removed (Table 7). Approximately 1% (0.4 acres) of sensitive plant communities (Arroyo Willow, California Oatgrass and Purple Needlegrass) would be permanently removed, and only 4% (1.3 acres) would be temporarily disturbed (Table 7). These impacts are anticipated to be local and minor, especially considering the net beneficial impacts to vegetation and native plant communities.

Short-term indirect adverse impacts to vegetation and native plant communities may occur, such as vegetation degradation (i.e. from dust, crew trampling) during trail construction, restoration, erosion repair, non-native plant removal, planting, and monitoring. Long-term indirect adverse impacts may result from future weed encroachment in project areas after soil disturbance. These impacts would be temporary, local, and minor, especially considering the net beneficial impacts

to vegetation and native plant communities described below. To reduce weed encroachment and impacts to native vegetation communities, the following mitigation will be implemented.

Mitigation Measures:

- All vehicles will be brought in cleaned and free of weeds to prevent the spread and/or introduction of invasive plant species.
- Soils and vegetation contaminated with weed seeds would be segregated and disposed of or treated as appropriate.
- At the discretion of the project Biological Monitor, restrictions will be placed on the movement or deposition of fill, rock, or other materials containing weed seed or viable plant cuttings to areas relatively free of weeds.

Site-wide Management Actions would result in long-term direct beneficial impacts due to the restoration of more than 13.3 acres of native habitats from soil decompaction and planting, erosion repair, and non-designated trail removal. Further, up to 8 acres of non-native invasive Monterey pine and cypress trees would be removed (Table 7), creating space for native plant communities to flourish. These beneficial impacts to vegetation and native plant communities would be local and moderate to major.

Stewardship Actions would result in long-term indirect beneficial impacts over the entire 110 acre site. Vegetation and native plant communities would benefit from the control of non-native invasive plant species by improving native plant composition and diversity, and removing future threats to native plant communities from expanding weed populations. Site-wide Management Actions would also result in short-term indirect beneficial impacts to native plant communities from the reduced and controlled level of recreational use which would limit vegetation degradation due to off-trail trespass and erosion. These beneficial impacts to vegetation and native plant communities would be local to regional and moderate to major.

Conclusion

Alternative 1 would result in short and long-term, direct and indirect, local, and minor adverse impacts to vegetation and native plant communities. With the implementation of the Best Management Practices in Appendix E, adverse impacts would be reduced to less-than-significant levels. In contrast, the proposed project would result in long-term, direct and indirect, local to regional, and moderate to major beneficial impacts. Although 1.5 acres may be impacted, over 13.3 acres would be directly restored resulting in a net increase of a minimum of 11.8 acres and a ratio of nearly 1:9 for impacted to restored habitat. Additionally, removal of invasive vegetation would occur over all 110 acres. Overall, the proposed project would result in a net increase to the quantity and quality of vegetation and native plant communities. Cumulative impacts would be the same as described under Alternative 1 – Wildlife.

Alternative 2 Impacts – Vegetation and Native Plant Communities Impacts

The majority of the proposed short-term and long-term activities for Alternative 2 are identical to those proposed for Alternative 1. Therefore impacts from these activities under Alternative 2 would be identical to the impacts described under Alternative 1. However, the trail use designations are more limited under Alternative 2 than under the Preferred Alternative. The trail

use designations would result in 2.4 miles of trails that would be “hiker only” as compared to 1.3 miles of hiker-only trails in Alternative 1. This would likely result in less visitor traffic and reduced potential for off-trail trespass by bicycles and horses (or by hikers to avoid bicycles and horses) along the “hiker only” trail segments, thereby reducing the potential for habitat/vegetation trampling, wildlife disturbance, and erosion/sedimentation. This reduction in potential impacts would be most substantial along the Bowl Trail, as this areas supports some of the most sensitive wetland and pond habitats on-site, which provide habitat for federally listed species. However, the reduction of these potential impacts under Alternative 2 is not quantifiable.

Conclusion

Differences in impacts to *Vegetation and Native Plant Communities* resources between Alternative 2 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 2. Cumulative impacts would be the same as described under Alternative 1 – *Wildlife*.

Alternative 3 Impacts – Vegetation and Native Plant Communities Impacts

The majority of the proposed short-term and long-term activities for Alternative 3 are identical to those proposed for Alternative 1. Therefore impacts from these activities under Alternative 3 would be identical to the impacts described under Alternative 1. However, these trail use designations under Alternative 3 would result approximately 3.5 miles of trails that would be designated “multiple-use” as compared to “hiker only” under Alternative 1. This increase in trail use options would likely result in increased potential for off-trail trespass by bicycles and horses (or by hikers to avoid bicycles and horses) along the Peak Trail, Point Trail, the Coastal Trail Coastal Connector Trail, and the Ridge Trail, thereby increasing the potential for habitat/vegetation trampling, wildlife disturbance, and erosion/sedimentation (particularly in “Special Restoration Area C”, the erosion repair site along the Peak Trail). However, the increase of these potential impacts under Alternative 3 is not quantifiable.

Conclusion

Differences in impacts to *Vegetation and Native Plant Communities* resources between Alternative 3 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 3. Cumulative impacts would be the same as described under Alternative 1 – *Wildlife*.

Alternative 4 Impacts Vegetation and Native Plant Communities Impacts

Under the “No Action” Alternative (Alternative 4), none of the proposed actions would be implemented within the Project Area. Therefore, no trail construction, restoration, or removal would occur, no ponds would be built, no improvements would be made to improve on-site hydrologic connectivity, no invasive non-native plants would be removed, no trash or debris would be removed, no areas of erosion would be repaired, no programmatic site improvements would be implemented, no monitoring or maintenance would occur, and no community training or education would be implemented. As a result, no negative impacts would occur to biological resources from these activities from equipment, vehicle or crewmember disturbances, habitat

removal, harm, or mortality. However, impacts to biological resources from continued uncontrolled visitor use along the many non-designated trails, and especially from illegal off-road vehicle use, would continue to result in possible disturbance and mortality to wildlife and special status wildlife, and degradation (from trampling and erosion) to wildlife habitats, native plant communities and wetlands.

Wildlife habitat and native plant communities would remain unchanged initially, but because additional native plant communities might not be restored due to trash/debris removal, weed removal, and planting, no additional benefits to wildlife could be expected or ensured. Over the long-term, the distribution and species composition of wildlife habitats, vegetation and native plant communities would change due to further encroachment by invasive, non-native plant species. Active restoration activities such as soil decompaction and planting would not occur in the Disturbed habitat, and therefore, there would be no net increase in 5.4 acres of native plant communities.

Uncontrolled visitor use and the lack of active habitat restoration would result in the slow loss and degradation of suitable foraging, aestivation, upland, and wetland habitat for California red-legged frog, San Francisco garter snake, and other special status wildlife from ongoing visitor use (non-designated trail development, erosion, trash, invasive plant encroachment, illegal uses such as off-road vehicle and off-road bicycle use). There would be no net benefit to these from pond construction or hydrology connectivity improvements. In addition, without active management, the grassland habitats used for upland aestivation and dispersal for California red-legged frog and San Francisco garter snake, as well as some special status birds, would continue to be lost as converts to scrub habitat over time.

Conclusion

Alternative 4 may result in long-term, indirect, adverse, local, and minor to moderate impacts to *Vegetation and Native Plant Communities* that may be considered significant if continued non-native plant encroachment substantially changes the species composition within sensitive plant communities. Cumulative impacts would be the same as described under Alternative 4 – *Wildlife*.

3.6.3 Wetlands

3.6.3.1 Affected Environment - Wetlands

Wetlands are defined by the CWA as “[t]hose areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” Under this definition, three criteria must be attained for classification as a jurisdictional wetland: dominance of wetland vegetation, presence of wetland hydrology (inundation or saturation for a specific period of time), and the occurrence of hydric (wetland) soils. Potential jurisdictional wetlands and other waters of the United States subject to Section 404 of the CWA in the project area may include the northern wetland north of Mori Road and west of the Fairway Drive park entrance (Special Restoration Area B), existing seeps between the CCT Bowl Connector and Mori Road (Special

Restoration Area B), and seasonal ponding in depressions located along the eastern half of the Upper Trail in Special Restoration Area A.

A second wetland definition, one reflecting the broader habitat values associated with wetlands, is used by the USFWS for their National Wetlands Inventory. The USFWS Cowardin system classifies wetlands based on vegetative life form, flooding regime, and substrate material. For the purposes of this definition, wetland features must meet one or more of three criteria. Not all wetlands classified under this system are considered jurisdictional under the USACE definition and CWA.

Jurisdictional Waters and Wetlands

In June 2004, a formal delineation of wetlands and waters considered potentially under the jurisdiction of the USACE was conducted within a 0.08 acre portion of the site (Site A; Figure 13) for the 2004 pond construction project to provide additional aquatic habitat for the San Francisco garter snake and its main food sources, the California red-legged frog and the Pacific tree frog. This 0.08 acre area was considered non-jurisdictional by the USACE (letter dated September 15, 2004).

In January 2006, a formal wetland delineation of the remaining portion of the project area was conducted in accordance with USACE methods. This delineation concluded that four additional areas (Sites B through E) exhibited wetland characteristics to be considered potentially jurisdictional by the USACE (Table 5; Figure 14). These four wetland areas total 0.13 acre; one of the delineated features also supported 479 linear feet of “other waters” as an unvegetated drainage ditch supporting perennial downstream flows. Consultation with USACE is in progress to determine the jurisdictional status of the wetland areas that may be impacted by this project.

TABLE 5. POTENTIALLY JURISDICTIONAL USACE WETLANDS AND WATERS AT MORI POINT.

Site	Potential Jurisdictional Wetland (Acres)	Temporary Impacts to Potential Jurisdictional Waters (linear feet)
Site B	0.02	
Site C	0.05	479
Site D	0.03	
Site E	0.03	
Total Wetlands and Waters	0.13	479

FIGURE 14. POTENTIAL USACE JURISDICTIONAL WETLANDS AT MORI POINT.

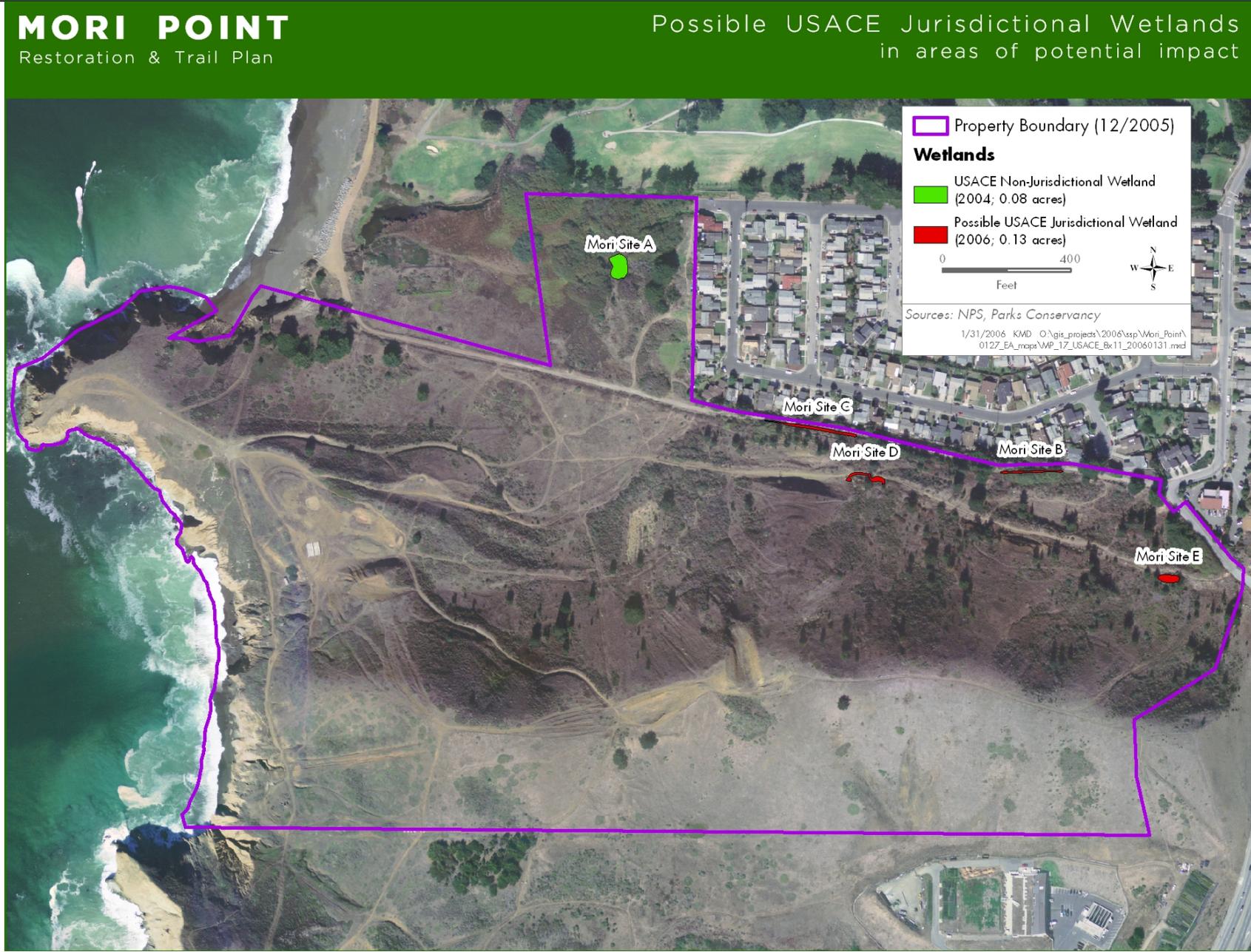
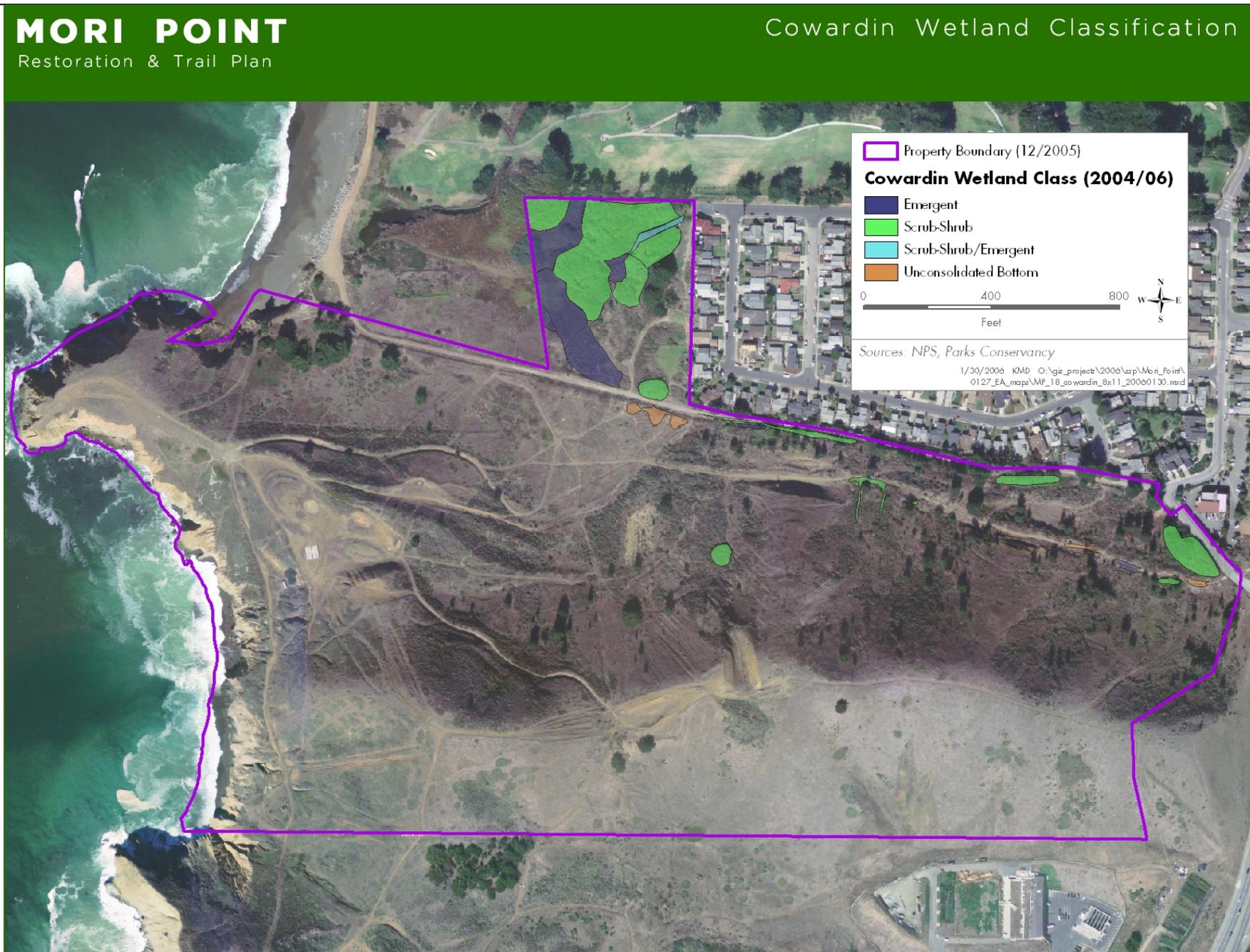


FIGURE 15. COWARDIN CLASSIFICATION WETLANDS AT MORI POINT.



USFWS Wetlands (According to Cowardin Classification)

Surveys for wetlands as defined by the USFWS Cowardin classification system were conducted on-site in 2004 and 2006. This definition expands wetland areas to include features such as mudflats and rocky intertidal zones, and classifies wetlands rather than delineating their specific boundaries.

Based on these surveys, 8.7 acres of wetlands have been mapped within the Project Area (Figure 15). The types of Cowardin wetlands found within the project area are presented in Table 6.

TABLE 6. COWARDIN CLASSIFICATION WETLANDS MAPPED AT MORI POINT.

Cowardin Classification Wetland	Acres On-site
Emergent (palustrine)	5.3 acres
Scrub-Shrub (palustrine)	3.1 acres
Scrub-Shrub/Emergent (palustrine)	0.1 acre
Unconsolidated Bottom (riverine)	< 0.2 acre
<i>TOTAL</i>	<i>8.7 acres</i>

The 0.08-acre area identified as a non-jurisdictional wetland during the June 2004 wetlands delineation of the proposed pond construction area is identified by the Cowardin classification system as an Emergent Wetland. However, a new pond was constructed in this area in November 2004 for habitat enhancement for the San Francisco garter snake and its main food sources, the California red-legged frog and the Pacific tree frog.

3.6.3.2 Environmental Consequences - Wetlands

Alternative 1 - Wetlands Impacts

Site-wide Management Actions would result in short-term direct adverse impacts to less than 0.18-acre of Cowardin wetlands (Table 8), and 0.04 acres of potentially jurisdictional USACE wetlands (Table 9) due to degradation or excavation from social trail removal, erosion repair, and debris removal. Site-wide Management Actions would also result in long-term direct adverse impacts to 0.05 acres of Cowardin wetlands due to excavation for pond construction or filling for new trail construction (Table 8). However, these impacts are considered local and minor, especially considering the net benefits to wetlands described below.

TABLE 8. IMPACTS TO COWARDIN WETLANDS

Site-wide Management Actions	Cowardin Wetland Class				TOTAL
	<i>Emergent</i>	<i>Scrub-Shrub</i>	<i>Scrub-Shrub/Emergent</i>	<i>Unconsolidated Bottom</i>	
Trails (permanent)	0.01 acre	0.02 acre		0.02 acre	0.05 acre
Pond Construction (permanent)				<0.01 acre	<0.01 acre
Trail Improvement/Construction (temporary)	0.02 acre	0.04 acre		0.05 acre	0.11 acre
Social Trail Removal (temporary)	0.01 acre	0.01 acre	<0.01 acre	0.01 acre	<0.04 acre
Erosion Repair (temporary)				<0.01 acre	<0.01 acre
Debris Removal (temporary)				0.03 acre	0.03 acre
TOTAL PERMANENT IMPACTS	0.01 acre	0.02 acre	--	0.02 acre	0.05 acre
TOTAL TEMPORARY IMPACTS	0.03 acre	0.05 acre	<0.01 acre	0.09 acre	<0.18 acre

TABLE 9. TEMPORARY IMPACTS TO POTENTIAL USACE JURISDICTIONAL WETLANDS

Site	Acres of Temporary Wetland Impact
Site B	0.01
Site C	0.02
Site D	0.01
Site E	0.00
Total Wetlands and Waters	0.04

TABLE 10. POTENTIAL NET GAIN OF WETLAND HABITAT FROM PROPOSED POND CREATION

Proposed Pond Creation	Cowardin Wetlands Permanently Impacted by all Actions	Potential Net Gain in Wetland Habitat	Potential Compensation Ratio
0.4 acre	0.05 acre	0.35 acre	7:1

Site-wide Management Actions may result in short-term indirect adverse impacts to wetlands from inadvertent removal and/or degradation (i.e. from dust, crew trampling, erosion/sedimentation) during trail construction, habitat restoration, or erosion repair activities. Site-wide Management Actions may also result in long-term indirect adverse impacts to wetland hydrology due to earth moving activities (such as berm removal and pond construction). However, most of these impacts are expected to be temporary and minor, especially considering the net benefits to wetlands described below. Stewardship Actions such as invasive non-native plant removal/control, trail maintenance, planting, and monitoring may result in indirect adverse impacts to wetlands. These impacts would be infrequent, temporary, highly localized, and

negligible with implementation of the Best Management Practices (BMPs) described in the Procedural Manual for Director's Order 77-1 and listed Appendix E.

Site-wide Management Actions would result in long-term beneficial direct impacts to wetlands due to the creation of 0.4 acres of ponds beneficial impacts to wetlands would be local to regional and major. These actions would also result in long-term indirect beneficial impacts to wetlands from the removal of weeds (particularly Cape ivy), which would improve wetland function, native plant composition, and would also remove future threats to wetlands from expanding weed populations. Long-term indirect beneficial impacts would result from increased hydrologic connectivity between uplands, wetlands, and proposed ponds due to berm removal and boardwalk/bridge construction. Wetlands would also benefit from reduced and controlled levels of recreational use. These beneficial impacts to wetlands would be local and minor to moderate.

Cumulative Impacts

The Laguna Salada wetlands, located in the lowest reach of the watershed, can be impacted by watershed activities that affect water quality or quantity. Generally, development in the watershed has adverse affects to water quality and quantity, but data does not exist to quantify these impacts. The long-term beneficial affects to local wetlands described above will not contribute to other watershed impacts affecting the Laguna Salada wetlands.

Conclusion

Alternative 1 would result in short -term, direct and indirect, local, and minor impacts to wetlands. With implementation of the Best Management Practices in Appendix E, these adverse impacts to wetlands would be reduced to less-than significant levels. In contrast, the proposed project would result in local to regional major impacts to wetlands. Although 0.05 acres of Cowardin wetlands would be removed, 0.4 acres of ponds would be created, resulting in the net increase of 0.35 acres of Cowardin wetlands (Table 9) and an approximate ratio of 8:1 for created to removed habitat (Table 10). Overall, the proposed project is expected to result in net benefits to the quantity and quality of wetland habitat.

Consultation with USACE is underway for potentially jurisdictional wetlands; if these are determined to be jurisdictional, additional mitigation measures may be added to the Finding of No Significant Impact (FONSI) as a result of the USACE and RWQCB consultation, if necessary.

Alternative 2 - Wetlands Impacts

The majority of the proposed short-term and long-term activities for Alternative 2 are identical to those proposed for Alternative 1. Therefore impacts to wetlands would be identical to the impacts described under Alternative 1. Trail use designations are more limited under Alternative 2 than under the Preferred Alternative but this is not anticipated to create any additional adverse impacts to wetlands. The trail use designations would result in 2.4 miles of trails that would be "hiker only" as compared to 1.3 miles of hiker-only trails in Alternative 1. This would likely result in less visitor traffic and reduced potential for off-trail trespass by bicycles and horses (or

by hikers to avoid bicycles and horses) along the “hiker only” trail segments, thereby reducing the potential for habitat/vegetation trampling, wildlife disturbance, and erosion/sedimentation. This reduction in potential impacts would be most substantial along the Bowl Trail, as this areas supports some of the most sensitive wetland and pond habitats on-site, which provide habitat for federally listed species. However, the reduction of these potential impacts under Alternative 2 is not quantifiable.

Conclusion

Differences in impacts to wetlands between Alternative 2 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 2. Cumulative impacts would be the same as for Alternative 1. Cumulative impacts would be the same as described under Alternative 1 – *Wetlands*.

Alternative 3 – Wetlands Impacts

The majority of the proposed short-term and long-term activities for Alternative 3 are identical to those proposed for Alternative 1. Therefore impacts from these activities under Alternative 3 would be identical to the impacts described under Alternative 1. Trail use designations are more limited under Alternative 2 than under the Preferred Alternative but this is not anticipated to create any additional adverse impacts to wetlands.

Conclusion

Differences in impacts to biological resources between Alternative 3 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 3. Cumulative impacts would be the same as for Alternative 1. Cumulative impacts would be the same as described under Alternative 1 – *Wetlands*.

Alternative 4 - Wetlands Impacts

Under the “No Action” Alternative (Alternative 4), none of the proposed actions would be implemented within the Project Area. As a result, no negative impacts would occur to biological resources from these activities from equipment, vehicle or crewmember disturbances, habitat removal, harm, or mortality. However, impacts to biological resources from continued uncontrolled visitor use along the many non-designated trails, and especially from illegal off-road vehicle use, would continued to result in possible disturbance and mortality to wildlife and special status wildlife, and degradation (from trampling and erosion) to wildlife habitats, native plant communities and wetlands.

Wildlife habitat and native plant communities would remain unchanged initially, but because additional native plant communities might not be restored due to trash/debris removal, weed removal, and planting, no additional benefits to wildlife could be expected or ensured.

Uncontrolled visitor use and the lack of active habitat restoration would result in the slow loss and degradation of suitable foraging, aestivation, upland, and wetland habitat for California red-legged frog, San Francisco garter snake, and other special status wildlife from ongoing visitor use (non-designated trail development, erosion, trash, invasive plant encroachment, illegal uses

such as off-road vehicle and off-road bicycle use). There would be no net benefit to these from pond construction or hydrology connectivity improvements.

Cumulative Impacts

The Laguna Salada wetlands, located in the lowest reach of the watershed, can be impacted by watershed activities that affect water quality or quantity. Generally, development in the watershed has adverse affects to water quality and quantity, but data does not exist to quantify these impacts. By not doing the project, long-term beneficial affects to local wetlands would not be achieved. On-going impacts as described above would contribute to other watershed impacts affecting the Laguna Salada wetlands.

Conclusion

Alternative 4 may result in long-term, indirect, adverse, local, and minor to moderate impacts to wetlands which are anticipated to be less-than-significant.

3.6.4 Special Status Species

3.6.4.1 Affected Environment – Special Status Species

As defined in this document, species are accorded “special status” for their recognized rarity or vulnerability to various causes of habitat loss or population decline. Some are formally listed and receive specific protection defined in federal or state endangered species legislation. Other species have no formal listing status as threatened or endangered, but have designations as “rare” or “sensitive” on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, such as the California Native Plant Society.

NPS Management Policies 2001 state that potential effects of agency actions will also be considered on state or locally listed species. The National Park Service is required to control access to critical habitat of such species, and to perpetuate the natural distribution and abundance of these species and the ecosystems upon which they depend.

State and federally listed and other sensitive species were identified through discussions with GGNRA staff, informal consultation with USFWS, and a review of State database information (California Department of Fish and Game’s [CDFG] Natural Diversity Database, and the California Native Plant Society’s [CNPS] On-line Electronic Inventory). A letter requesting a current list of federal threatened, endangered, and special concern species was sent to the USFWS. The response letter is provided in Appendix F. An analysis of the potential impacts to these species is included in this section in Appendix G.

Plants

Based on a search of the California Natural Diversity Database (CDFG 2005), the CNPS Electronic Inventory (2005), and the Sacramento Office’s USFWS List (2005a), and based on an assessment of known habitat and soil types at Mori Point, 42 special status plant species were determined to have some potential to occur in habitats found on-site (Appendix G). However,

according to the 2005 Biological Opinion for the construction of ponds at Mori Point, no listed plants have been observed within the pond project area (USFWS 2005b). In addition, no special status plants were found during surveys conducted in August 2002, although *Leptosiphon rosaceus* (formerly *Linanthus rosaceus*), a CNPS List 1B plant, was observed just outside the property boundary. No rare plants have been found during site observations and vegetation alliance mapping efforts since this survey. Therefore, no special status plant species are considered to be present at Mori Point.

Wildlife

Based on a search of the California Natural Diversity Database (CDFG 2005), a USFWS species list (2005a), an assessment of known habitat types at Mori Point, and on previous survey efforts, two federally listed species (San Francisco garter snake and California red-legged frog) and one non-listed but sensitive invertebrate (San Francisco forktail damselfly), raptors and migratory birds are known to occur on-site (Figure 9). An additional 15 special status wildlife species (two invertebrates, two reptiles, eight birds and two mammals) were determined to have a moderate potential to occur in habitats found on-site (Appendix G).

Federally Listed Species

San Francisco garter snake. The San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) was listed as endangered in 1967 (32 FR 4001), prior to the protections of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1536 [c]), and was listed as endangered by the State of California in 1971. Although habitat extent and conditions continue to decline, no Critical Habitat has been designated for the species. All of the monitored populations of the species have declined since listing. The zoo population in North America went extinct in 2003. The species continues to be held in zoos and private collections in Europe, although the European zoos continue to have problems with inbreeding depression. In 2005, six San Francisco garter snakes were procured from the Netherlands and currently reside in the San Francisco and San Diego Zoos.

The 1985 Recovery Plan identified threats to the species as loss of habitat from agricultural, commercial and urban development, and collection by reptile fanciers and breeders (FWS 1985). The historical threats to the species remain, but there are now additional threats to the species, such as: (1) The California red-legged frog, the primary prey for the San Francisco garter snake, is in decline, was listed as threatened in 1996 (61 FR 25813) and faces an additional threat (post-listing) from chytrid fungus (*Batrachochytrium dendrobatidis*), (2) introduction of bullfrogs (*Rana catesbeiana*) which prey on both the San Francisco garter snake and California red-legged frog; (3) hybridization and outcrossing; (4) inbreeding depression resulting from low numbers, as evidenced by the low fecundity and thriftiness of the European zoo population; (5) record-low numbers of the species in the wild; (5) parasites [Larsen 1994, Cover and Boyer and 1986 (*in litt.*)]; (6) aquatic habitat removal for flood control; and (7) seral succession of the remaining non-breeding habitat to the level that much of it has become unsuitable for the species.

There are two important components to San Francisco garter snake habitat: ponds that support the California red-legged frog and Pacific treefrog and the surrounding upland that supports the

California pocket gopher (*Thomomys bottae navus*) and Western vole (*Microtus californicus*).

Adult snakes feed primarily on California red-legged frogs and Pacific treefrogs. Adult San Francisco garter snakes are known to gorge on tadpoles of both species, when ponds dry prior to metamorphosis (McGinnis 1989). Newborn and juvenile San Francisco garter snakes depend heavily upon juvenile Pacific treefrogs as prey. If newly metamorphosed Pacific treefrogs are not available, the young snakes may not survive, although small earthworms and young-of-year slender salamanders, which are found in leaf litter and decomposing vegetation, may provide a temporary food source (McGinnis 1989, Larsen 1994). Female San Francisco garter snakes exhibit a high level of site fidelity (McGinnis *et al.* 1987, McGinnis 1989, Keel *et al.* 1991), particularly the burrow they use for aestivation and hibernation. Females can be found daily at the entrance to their burrow, and travel to the wetland one to two times per day (Paul Keel, pers. comm.) San Francisco garter snake females are larger than males (up to 36 inches, as opposed to up to 28 inches). Females are easily distinguished from males by their shorter tails, relative to overall body length.

Laguna Salada is a managed waterbody within the Sharp Park Golf Course north of Mori Point, which supports the California red-legged frog and the northernmost population of the San Francisco garter snake. The Laguna Salada and Mori Point areas are considered as a sub-population of the Pacifica population complex. Although the historical records for Laguna Salada and Mori Point treat these areas as two separate populations of the species, the only feature that distinguishes them is a property line. The treatment of Laguna Salada and Mori Point as a single sub-population is consistent with habitat usage in the “saddle area” between Mori Road and the Bottoms’ Mitigation Pond (now owned by the Peebles Atlantic Development Corporation), as illustrated in the *Laguna Salada Resource Enhancement Plan* (PWA *et al.*, 1992).

The north side of Mori Point is within the Sanchez Creek watershed, which is a mixture of urban uses such as residences, roads and a golf course while open space areas such as Sweeney Ridge are under NPS management. The Sanchez Creek corridor is the most likely connection between this sub-population and the nearest adjacent population on San Francisco Water Department lands. The corridor between these two populations may be compromised, or at least constrained, by ongoing development.

Breeding habitat for the San Francisco garter snake within the privately owned quarry lands south of Mori Point was filled and dozed on two separate occasions in the 1980s. The property was recently acquired by the Peebles Atlantic Development Corporation. Foraging habitat at Laguna Salada was compromised several times in the 1970s and 1980s, due to breaching of the dunes during winter-storm events and subsequent inundation by seawater. Breeding habitat and hibernacula on the Laguna Salada side of Mori Point has been seriously compromised by dumping of debris, off-road vehicle use, and non-designated trails—this is most serious in the Bowl area, where the highest numbers of San Francisco garter snakes were recorded in 1979.

Many of the sub-populations of the Pacifica population have been extirpated due to residential development. Zero to low detections, even with intensive surveying and trapping in 1984 and 1988, indicate that this population was extirpated in the mid 1980s, and again by 1990, and is

being recolonized. There was a report of a sighting at Mori Point in 2000 and the latest survey information of the Laguna Salada Mori Point sub-population has produced seven San Francisco garter snakes (K. Swaim, *in litt.*, 2004). Other historical sightings of the species have been documented at Mori Point (Figure 16).

The construction of additional ponds designed to provide aquatic habitat for San Francisco garter snake and California red-legged frog (pictured below) was authorized in 2004 by the USFWS (USFWS 2005b); two ponds were constructed in 2004. Since construction of the ponds no snake surveys have been conducted on site.



California red-legged frog. The California red-legged frog (*Rana aurora draytonii*) was federally listed as threatened on May 23, 1996, (61 FR 25813), effective June 24, 1996. Factors contributing to the threatened status of the species include: urban encroachment, construction of reservoirs and water diversions, contaminants, agriculture. These activities can destroy, degrade, and fragment habitat. The introduction of non-native predators, competitors, and disease are additional factors that continue to threaten the viability of many California red-legged frog populations.

Habitat loss and alteration, over-exploitation, and introduction of exotic predators were important factors in the species' decline in the early to mid-1900s. Reservoir construction, expansion of introduced predators, inappropriate grazing and prolonged drought fragmented and eliminated many of the Sierra Nevada foothill populations. California red-legged frogs are currently threatened by human activities, many of which operate synergistically and cumulatively with each other and with natural disturbances (*i.e.*, droughts and floods). Current factors associated with declining populations of the red-legged frog include degradation and loss of its habitat through agriculture, urbanization, mining, overgrazing, recreation, timber harvesting, non-native plants, impoundments, water diversions, degraded water quality, and introduced predators. These factors have resulted in the isolation and fragmentation of habitats within many watersheds, often precluding dispersal between sub-populations and jeopardizing the viability of metapopulations (broadly defined as multiple subpopulations that occasionally exchange individuals through dispersal, and are capable of colonizing or "rescuing" extinct habitat patches). The fragmentation of existing habitat and the continued colonization of existing habitat by nonnative species may represent the most important current threats to California red-legged frogs. California red-legged frog populations are usually threatened by more than one factor.

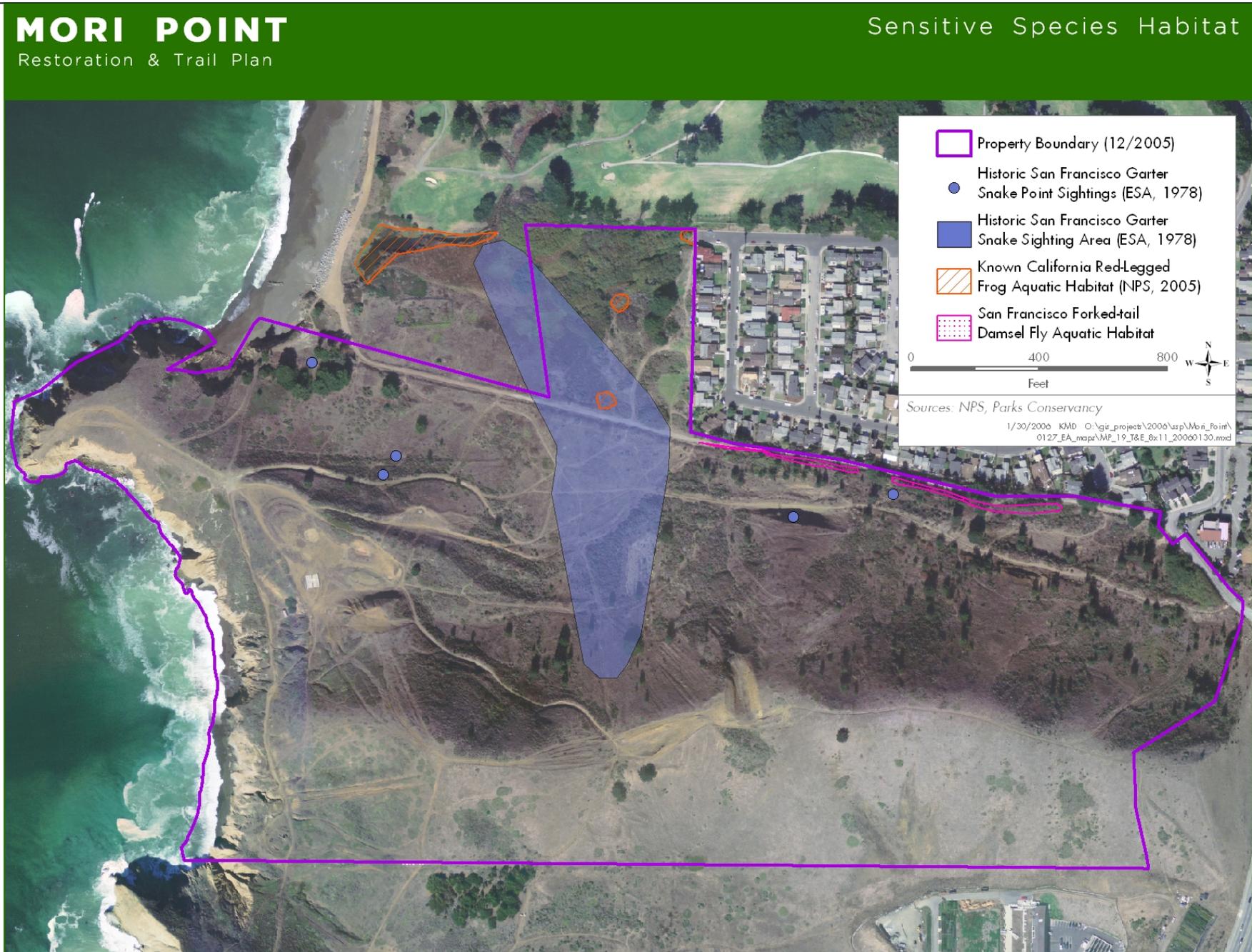
Establishment of bullfrogs has a notably destructive effect on California red-legged frog populations, because they impact California red-legged frogs during all life stages and in multiple ways. Cook (*in litt.* 2000) documented bullfrog predation of a large adult red-legged frog. Larval bullfrogs enter their carnivorous stage during the spring, concurrent with the early stages of red-legged frog larval development, at a time when California red-legged frog larvae are small and non-carnivorous. In addition to predation, bullfrogs have a competitive advantage over red-legged frogs: bullfrogs are larger, possess more generalized food habits (Bury and Whelan 1984), possess an extended breeding season (Storer 1933) where an individual female can produce as many as 20,000 eggs during a breeding season (Emlen 1977), and larvae are unpalatable to predatory fish (Kruse and Francis 1977). In addition to competition, bullfrogs also interfere with California red-legged frog reproduction. Both California and northern red-legged frogs have been observed mounted on male and female bullfrogs (Jennings and Hayes 1990, Twedt 1993, USFWS Files). Thus, bullfrogs are able to prey upon and out-compete California red-legged frogs.

Many pesticides and fertilizers have been shown to have deleterious effects on both California red-legged frogs and Pacific treefrogs. Runoff of pesticides from golf courses (Odanaka *et al.* 1994, Ryals *et al.* 1998, Suzuki *et al.* 1998) may suppress California red-legged frogs by substantially eliminating their prey base and by direct, reduced fitness to individual frogs. Additional threats to the California red-legged frog are *chytrid* fungus and *trematode* infestations. Parasitic infection from the trematode, *Ribeiroia ondatrae*, has been shown to result in limb deformations in the northern red-legged frog and in the Pacific treefrog.

California red-legged frogs breed from November through March with earlier breeding records occurring in southern localities (Storer 1925). Egg masses are typically attached to vertical emergent vegetation, such as bulrushes or cattails (Jennings *et al.* 1992), but can be attached to the substrate of ponds (Swaim, pers. comm. 2004). California red-legged frogs are often prolific breeders, laying their eggs during or shortly after large rainfall events in late winter and early spring (Hayes and Miyamoto 1984). Eggs hatch in six to 14 days (Jennings 1988). Breeding sites include streams, creeks, ponds, marshes, sag ponds, deep pools and backwaters within streams and creeks, dune ponds, lagoons, estuaries, and artificial impoundments, such as stock ponds. California red-legged frogs often successfully breed in artificial ponds with little or no emergent vegetation, as well as ponds with emergent vegetation, and have been observed to successfully breed and inhabit stream reaches that are not cloaked in riparian vegetation, as well as closed-canopy creeks and streams; therefore, factors other than cover are more likely to influence the suitability of aquatic breeding sites, such as the general lack of introduced aquatic predators.

California red-legged frogs often disperse from their breeding habitat to utilize various aquatic, riparian, and upland habitats as summer habitat. This could include ponds, streams, marshes, boulders or rocks and organic debris such as downed trees or logs; industrial debris; and agricultural features, such as drains, watering troughs, or spring boxes. California red-legged frogs can also use small mammal burrows and moist leaf litter (Jennings and Hayes 1994), and ravines that have “at least some surface flow during most of the year” (Bulger *et al.* 2003).

FIGURE 16. SPECIAL STATUS SPECIES OCCURRENCES KNOWN WITHIN THE PROJECT AREA.



The historic range of the California red-legged frog extended coastally from the vicinity of Point Reyes National Seashore, Marin County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico (Jennings and Hayes 1985). California red-legged frogs were historically documented with 46 counties but the taxon now remains in 238 streams or drainages within 23 counties, representing a loss of 70 percent of its former range (USFWS 2000). Red-legged frogs are still locally abundant within portions of the San Francisco Bay Area and the Central Coast. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse Ranges. The species is believed to be extirpated from the southern Transverse and Peninsular ranges, but is still present in Baja California, Mexico (CDFG 1998).

California red-legged frogs are breeding in and around Mori Point, primarily in three locations: (1) in the Mitigation Pond (adjacent to the City of Pacifica's tertiary water treatment facility at Calera Creek, south of Mori Point), (2) at Horse Stable Pond (owned and managed by the City of San Francisco Department of Recreation and Parks), and (3) in the newly created ponds on NPS lands. Although the Mitigation Pond adjacent to Calera Creek was intended as California red-legged frog breeding habitat, it is sedimenting in; consequently, survivorship is expected to be good, but in decline. Survivorship may be impacted at Horse Stable Pond, by pond pumping which has exposed California red-legged frog eggs to desiccation. The construction of additional ponds designed to provide aquatic habitat for California red-legged frog and San Francisco garter snake was authorized in 2004 by the USFWS (USFWS 2005b); two ponds were constructed in 2004 and are referred to as the northern and southern ponds, respectively.

The successful breeding within Mori Point, undisrupted by saltwater intrusion, marine overwash, or desiccation from pumping, is most likely to occur in Sanchez and Calera creeks and the newly created ponds at Mori Point.

Breeding surveys conducted during the winters of 2003 – 2006 by the GGNRA identified egg masses of California red-legged frog along the shoreline of Horse Stable Pond (outside of the GGNRA boundary). Additional surveys identified California red-legged frog egg masses at both ponds constructed by the NPS in winter 2006. Surveys of other seasonal wetlands within Mori Point did not find any California red-legged frog egg masses, although these sites were used by Pacific tree frogs for breeding. Later site visits identified the use of the emergent marsh habitats in the project site by adult California red-legged frogs when water is present. Known aquatic habitat for the species on-site is shown in Figure 16.

Non-listed Species

San Francisco forktail damselfly, Tomales isopod, Ricksecker's water scavenger beetle, and Leech's skyline diving beetle. The San Francisco forktail damselfly (*Ischnura gemina*) is considered sensitive by CDFG as it has both a global and state ranking of 2 (6-20 known occurrences or 1,000-3,000 individuals). This species is endemic to the San Francisco Bay Area and inhabits small, marshy ponds and ditches with emergent and floating aquatic vegetation (CDFG 2005). At Mori Point, the locally rare San Francisco forktail damselfly's larva occurs in a drainage ditch along the Mori Road (Figure 16). This species also has potential to occur in

other ponded habitats on-site.

The Tomales isopod (*Caecidotea tomalensis*) is considered sensitive by CDFG as it has both a global and state ranking of 2. This species inhabits localized fresh-water ponds or streams with still or near-still water in several Bay Area counties (CDFG 2005). Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*) is also has both a global and state ranking of 2; this species inhabits various water bodies and is known from the San Francisco Bay Area (CDFG 2005). Leech's skyline diving beetle (*Hydroporus leechi*) has a questionable global and state ranking of 1 (less than 6 known occurrences, or less than 1,000 individuals); this species inhabits aquatic habitats. These species have potential to occur in ponded habitats on-site.

Western pond turtle. The Western pond turtle (*Clemmys marmorata*) is a CDFG species of special concern. This species inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation; it needs basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg laying (CDFG 2005). This species also has the potential to occur in and around the on-site ponds.

California horned lizard. The California horned lizard (*Phrynosoma coronatum frontale*) is a federal and CDFG species of concern and frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes; this species needs open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects. This species has the potential to occur in grassland and shrub habitats on-site.

Raptors and other special status birds (including migratory birds). The majority of vertebrates recorded at Mori Point are resident and migratory birds (115 species) (Nericcio, 2004) The abundance of species observed indicates the important role that Mori Point plays within the migratory flight path for many raptors and songbirds. During bird migration, many species utilize Mori Point and other large fragmented areas along the San Francisco Peninsula as a place to shelter and hunt. White-tailed kites (*Elanus leucurus*), red-tailed hawks (*Buteo jamaicensis*), and red-shouldered hawks (*Buteo lineatus*) can often be seen stalking small prey, such as California voles, deer mice, and young brush rabbits, which provide a valuable food source for them. In addition to many birds of prey, Mori Point offers a rocky coastline where shore birds and marine birds feed. According to the database searches (CNDDDB 2005), the site also provides potential habitat for Ferruginous hawk (*Buteo regalis*), American peregrine falcon (*Falco peregrinus anatum* - non-breeding habitat), and other non-listed migratory birds (Marbled godwit [*Limosa fedoa*], Long-billed curlew [*Numenius americanus*], Rufous hummingbird [*Selasphorus rufus*], Allen's hummingbird [*Selasphorus sasin*]) (Appendix A). The Monterey pine, Monterey cypress, and eucalyptus groves on-site provide potential nesting habitat for raptors, while most of the other on-site habitats provide potential nesting or foraging habitat for the other migratory bird species.

San Francisco dusky-footed woodrat. The San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) is a federal species of concern and inhabits forest habitats of moderate canopy and moderate to dense understory; it also occurs in chaparral habitats. It constructs nests of shredded grass, leaves, sticks, and other material. This species may be limited by the availability of nest-building materials. This species also has the potential to occur in the

Monterey pine and Monterey cypress groves on-site.

American badger. The American badger (*Taxidea taxus*) is a CDFG species of special concern and is most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils and open uncultivated ground. It preys on burrowing rodents and digs burrows in the ground. This species has the potential to occur in most on-site upland habitats.

3.6.4.2 Environmental Consequences - Special Status Species

Alternative 1 – Special Status Species Impacts

Plants

No special status plant species are present, or are expected to be present, within the project area; therefore, no impacts are anticipated. Special status plant monitoring would be conducted according to GGNRA protocols as part of long-term management. If rare plant species are found on-site, appropriate protection measures would be developed, in coordination with the GGNRA Vegetation Ecologist, to avoid or minimize adverse impacts to these plants or populations.

Wildlife

Federally listed species

San Francisco Garter Snake. Since this species is federally endangered, the following environmental consequences analysis will address NEPA standards (significant “impacts”) as well as ESA Section 7 Biological Assessment standards (i.e. “effects”). For the purposes of this section, the term “impacts” refers to both NEPA significant impacts and ESA effects.

Site-wide Management Actions, including trail and pond construction, erosion repair, hydrology improvement, weed and debris removal, site improvement installation, and habitat restoration, may result in short-term direct adverse impacts to the San Francisco garter snake due to snake fatalities or disturbance to essential behaviors such as feeding⁴, dispersing, and breeding. Vehicles, equipment, or crewmembers could crush individuals or their burrows or cause harassment due to noise or vibration. The removal of non-native invasive plants may disturb and/or harm snakes sheltering within these plants. Project activities may cause snakes to move out of their resident habitat making them susceptible to injury or mortality due to predation or increased competition for food and living space with snakes in adjacent areas. Active removal of San Francisco garter snakes from the project footprint is expected to protect individual snakes from being crushed or cut up by heavy equipment; however, these activities may inadvertently result in harassment, harm or mortality to the relocated individuals. Upland habitat around the existing ponds will be protected to the maximum extent possible to allow for refugia for San Francisco garter snakes during construction.

⁴ Additionally, because California red-legged frogs are an important prey item for this species, effects on red-legged frogs from project activities may also have indirect effects on the snake’s foraging potential (effects to California red-legged frog are described separately below).

Trail construction may result in short-term indirect adverse impacts (such as degradation, damage, or dust) to 3.3 acres of potential San Francisco garter snake habitat within a 12-15-foot buffer of trails. The restoration of more than 13.3 acres of habitat may result in similar short-term indirect adverse impacts to habitat. However, these actions would be temporary, phased, local, and minor.

Adverse impacts may be local to regional, moderate to major, and “may affect / is likely to adversely affect” the San Francisco garter snake. The following measures will be implemented to minimize and/or avoid "take" of San Francisco garter snake and California red-legged frog during implementation of Site-wide Management Actions.

Mitigation Measures:

- No earthmoving or soil disturbing work shall occur in the vicinity of the “Bowl” or existing ponds or wetlands between November 15 and April 15, the breeding season for California red-legged frog and the season when San Francisco garter snake are inactive in their winter burrows.
- Vegetation in all construction areas will be progressively cleared by hand equipment to a height of 4 inches and checked for presence of snakes prior to ground-disturbance and construction equipment or vehicles entering the sites. Once vegetation is cleared, a pre-construction survey for the San Francisco garter snake will be conducted in the impact area.
- Prior to construction near wetlands or ponds, exclusion fencing will be constructed and all rodent burrows in the construction area will be hand excavated until the burrows terminates or until a maximum depth of 30 centimeters in areas where soil or fill will be removed or placed.
- Speed limits of 10 miles per hour will be posted on all access roads.
- A Biological Monitor will inspect for snakes and frogs underneath any vehicle that is parked for 30 minutes or more, immediately prior to moving the vehicle.
- Exclusion fencing gates will be closely monitored throughout construction to ensure no snakes enter the area.
- Personnel who detect any suspected San Francisco garter snake or California red-legged frog on-site will immediately report their finding to a Biological Monitor for positive identification. Non-permitted personnel will not attempt to capture or move any snake or frog detected. If the Biological Monitor determines that the animal is not a San Francisco garter snake or California red-legged frog, the Biological Monitor may hand capture and move the animal to suitable habitat outside the construction area. If the Biological Monitor determines that the detected animal is a San Francisco garter snake or a California red-legged frog, or is unable to positively identify the animal, then the Biological Monitor will notify the permitted biologist for appropriate action.
- A biologist holding a valid Scientific Collection Permit from the U.S. Fish and Wildlife Service will be on call or on-site to handle any San Francisco garter snakes or California red-legged frogs encountered during pre-construction and construction activities. Only a holder of a valid Scientific Collection Permit from the USFWS will handle San Francisco garter snakes. California red-legged frogs will only be handled

by a holder of a valid Scientific Collection Permit from the USFWS or a USFWS-approved Monitor.

- All excavated holes and trenches will be either covered at the end of the workday, ramped or escape boards will be placed in trench to allow the animals to escape. Trenches will be inspected each morning and late afternoon by the Biological Monitor as well as before the trench is filled. The permitted biologist will relocate any San Francisco garter snake or California red-legged frog individuals found.

To reduce daytime noise and potential disturbance to wildlife species due to construction, construction contractors should muffle or control noise from construction equipment through implementation of the following measures:

Mitigation Measures:

- Equipment and trucks used for construction should utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, and installation of sound blanket around the project site, wherever feasible and necessary). Construction vehicles should be properly maintained and equipped with exhaust mufflers that meet state standards.
- Impact tools used for construction should be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust should be used. External jackets on the tools themselves and quieter procedures should be used wherever feasible.
- Invasive non-native plant removal would be conducted as follows so that any San Francisco garter snakes that may be hiding in vegetation can escape unharmed. First, search each clump or patch thoroughly for snakes. If a San Francisco garter snake is found, disturbing it is likely to make it hide more deeply in the vegetation, therefore, leave the clump or patch alone and check it again on a later day. If no San Francisco garter snake is found, cut the vegetation manually 1 to 2 feet above ground level and search it again (carefully). If no San Francisco garter snake is found, the remainder of the clump or patch can be removed.

Long-term indirect adverse impacts to the San Francisco garter snake may also result from ongoing trail use and maintenance, invasive species removal, revegetation, trash removal, or monitoring. However, prior to removal of vegetation, the site will be surveyed for underground burrows. In those areas where no burrows are found, the plant will be removed by hand or by hand using a weed-wrench or other digging tool. Non-native vegetation with large root balls that could cause ground disturbance would be cut instead of pulled. Prior to any mechanical control of vegetation, such as brushcutting, sites will be walked through and visually inspected. The implementation of the below mitigation measure would further reduce adverse impacts and would be implemented to minimize and/or avoid "take" of San Francisco Garter Snake and California Red Legged Frog during implementation of Stewardship Actions. These adverse impacts would occur infrequently, and would be local and minor.

Mitigation Measures:

- Current sterilization protocols will be followed for all wetland sampling and monitoring at Mori Point, to protect against chytrid and trematode infestation.
- Wetlands will be monitored for invasive aquatic species and removal will be conducted if found.
- During invasive non-native plant removal, if physical removal or destruction is planned, conduct the work as follows so that any San Francisco garter snakes that may be hiding in the grass can escape unharmed. First, search each clump or patch thoroughly for snakes. This should be done with caution, since there is some potential for rattlesnakes to be present. If a garter snake is found, disturbing it is likely to make it hide more deeply in the vegetation, therefore, leave the clump or patch alone and check it again on a later day. If no garter snake is found, cut the vegetation manually 1 to 2 feet above ground level and search it again (carefully). If no garter snake is found, the remainder of the clump or patch can be removed.

Beneficial impacts to the San Francisco garter snake will be long-term. The construction of up to five new ponds (0.4 acres) providing aquatic habitat for the San Francisco garter snake and its main food sources, the California red-legged frog and the Pacific tree frog would result in long-term, direct, beneficial impacts. The created ponds are expected to increase and stabilize the prey base for the San Francisco garter snake, thereby increasing San Francisco garter snake numbers. An increase in San Francisco garter snake numbers would allow for more breeding opportunities, which could result in greater population-level genetic diversity. Long-term beneficial impacts to the species would also result from improved hydrologic connections between wetlands, uplands, and ponds. This connectivity would help to stabilize aquatic resources that have historically been fragmented by stochastic events, development, and motorized vehicle recreation. In addition, the proposed raised boardwalk/bridge along the road in Special Restoration Area B would allow for undisturbed migration between wetland and upland areas, reducing the potential for mortality due to vehicle crushing or visitor encounters along the road. These beneficial impacts to aquatic habitat are anticipated to be local to regional and moderate to major.

Site-wide Management Actions would also result in long-term direct beneficial impacts and effects to San Francisco garter snake upland dispersal and aestivation habitat by restoring 13.3 acres of upland habitats. Composting plant materials after invasive plant removal would increase slender salamander populations (USFWS 2004). This increase would provide an alternate food source for the San Francisco garter snake in years when saltwater intrusion or seasonal weather fluctuations cause the Pacific treefrog or California red-legged frog reproductive effort to fail. Long-term indirect beneficial impacts to the San Francisco garter snake would result from improvements in native habitat and species diversity and function from on-going weed control, revegetation, and monitoring; reductions in threats from toxic materials, entrapment, and predators; reductions in off-trail trespass and disturbance from visitors due to well-maintained, marked and signed trails; and reductions in erosion and associated degradation of habitats from well-maintained trails and erosion repair. These beneficial impacts would occur over the entire 110 acre site. These beneficial impacts are anticipated to be local to regional and moderate to major.

In addition, implementation of the Site-wide Management and Stewardship Actions would partially satisfy the following Conservation Recommendations outlined in the 2005 USFWS Biological Opinion for the construction of ponds at Mori Point:

1. Restore the “bowl” at Mori Point to its historical condition of annual and perennial grassland, with an herbaceous understory, by realigning the trail away from San Francisco garter snake breeding habitat and hibernacula and by introducing a natural ecological process--such as sporadic grazing. Work closely with the USFWS in the design and implementation of this action.
3. Restore the riparian area adjacent to Sanchez Creek by removing rubble, debris, non-designated trails, and encampments in the willow thickets and Monterey cypress overstory.
4. Work with the local residents to establish a reporting procedure for monitoring vandalism, illegal dumping, and camping, and install additional surveillance equipment along Sanchez Creek.

Conclusion

Alternative 1 would result in short and long-term, direct and indirect, local and regional, and minor to major adverse impacts to the San Francisco garter snake. With the implementation of the mitigation measures and the Best Management Practices in Appendix E, the proposed project actions will ultimately result in less-than-significant impacts to the species.

Overall, the proposed project “may affect/ is likely to adversely affect” the San Francisco garter snake, according to the federal Endangered Species Act (ESA). This is because the implementation of the mitigation measures and the Best Management Practices in Appendix E would reduce and minimize impacts to the species, adverse effects such as harassment, harm, or mortality of individuals may still occur during trail work, pond construction, erosion repair, or relocation of individuals from work areas.

However, impacts considered potentially major and actions that would potentially result in a “may affect/likely to adversely affect” determination would be short-term and construction related, and offset by the long-term benefits to the species as described below.

In contrast, the proposed project is expected to result in long-term, local to regional, direct and indirect, minor to major beneficial impacts. Although .05 acres of wetland habitat would be permanently impacted, up to 0.4 acres of pond habitat would be constructed for a net increase of 0.35 acres of aquatic habitat and an approximate ratio of 8:1 for created to impacted aquatic habitat. Similarly, although 2.7 acres of upland habitat would be impacted, over 13.3 acres would be restored, resulting in a net increase of 10.6 acres and an approximate ratio of 5:1 for restored to impacted habitats. Overall, the project is expected to result in a net increase in the quantity and quality of aquatic and upland habitats for the San Francisco garter snake. Cumulative impacts would be the same as described under Alternative 1 - *Wildlife*.

California red-legged frog

Since this species is federally threatened, the following environmental consequences analysis will address NEPA standards (significant “impacts”) as well as FESA Section 7 Biological Assessment standards (i.e. “effects”). In this section, the term “impacts” will be inclusive of both NEPA impacts and ESA effects.

Site-wide Management Actions, including trail and pond construction, erosion repair, hydrology improvement, weed and debris removal, site improvement installation, and habitat restoration, may result in short-term direct adverse impacts to the California red-legged frog due to fatalities or disturbance to essential behaviors such as feeding⁵, dispersing, and breeding. Vehicles, equipment, or crewmembers could crush individuals (particularly during the first heavy rains of the season when they are dispersing) or cause harassment due to noise or vibration. The removal of non-native invasive plants may disturb and/or harm any California red-legged frogs sheltering within these plants. Project activities may cause frogs to move out of their resident habitat making them susceptible to injury or mortality due to predation or increased competition for food and living space with frogs in adjacent areas. During project activities, California red-legged frogs may disperse into upland habitat or staging areas for cover making them vulnerable to crushing when equipment is moved. However, the likelihood of this occurring is low because there is higher-quality cover along Sanchez Creek and around Laguna Salada.

In addition, California red-legged frogs may be adversely impacted by increased sedimentation caused by runoff associated with project activities. If heavy sedimentation occurs in pools where California red-legged frogs breed, their egg masses could suffocate. However, erosion and sedimentation control measures, such as rice straw mulch, sediment traps, check dams, geofabrics, drainage swales, sand bag dikes and/or straw wattles would be installed wherever deemed appropriate to eliminate the potential for sediment discharge into storm water and into wetlands and creeks from project construction. Erosion control structures will be installed concurrently with construction so that run-off will be deflected away from sensitive habitats. The implementation of the mitigation measures listed for the San Francisco garter snake would reduce adverse impacts. Active removal of California red-legged frogs from the project footprint is expected to protect individual frogs from being crushed or cut up by heavy equipment; however, these activities may inadvertently result in harassment, harm or mortality to the relocated individuals⁶. Adverse impacts may be local to regional, moderate to major, and “may affect / is likely to adversely affect” the California red-legged frog.

Trail construction may result in short-term indirect adverse impacts (such as degradation, damage, or dust) to 3.3 acres of potential California red-legged frog habitat adjacent to trails. The restoration of 13.3 acres of habitat may result in similar short-term indirect adverse impacts

⁵ Additionally, because California red-legged frogs are an important prey item for this species, effects on red-legged frogs from project activities may also have indirect effects on the snake’s foraging potential (effects to California red-legged frog are described separately below).

⁶ Harm or mortality may be caused by the inadvertent transmission of *Chytridiomycosis* and *trematode* infection; however, the protocols used by the NPS and contractors holding 10(a)(1)(A) permits are sufficiently rigorous that they would not be the source of these threats.

to habitat. However, these actions would be temporary, local, minor, and phased, and have a net beneficial impact to California red-legged frog.

Long-term indirect adverse impacts to the California red-legged frog may result from ongoing trail use and maintenance, invasive species removal, revegetation, trash removal, or monitoring. The implementation of the above mitigation measures listed for the San Francisco garter snake would help to reduce adverse impacts. These impacts are anticipated to occur infrequently, and would be local and minor.

Beneficial impacts to the California red-legged frog will be long-term. The construction of up to 5 new ponds (0.4-acres) and improvements to hydrologic connectivity of on-site wetlands would result in improved aquatic habitat quality, quantity, and connectivity for the species. The created ponds and the improvements to hydrologic connections between wetlands and ponds would result in similar localized major beneficial impacts as described under the San Francisco garter snake.

Site-wide Management Actions would also result in long-term direct beneficial impacts and effects to California red-legged frog upland habitat by restoring 13.3 acres of on-site habitats. Stewardship Actions and Site-wide Management Actions would result a long-term indirect beneficial impacts to the California red-legged frog over the entire 110 acre site due to continued improvements in native habitat species diversity and function from on-going weed control, revegetation, and monitoring; reductions in threats from toxic materials, entrapment, and predators; reductions in off-trail trespass and disturbance from visitors due to well-maintained, marked and signed trails; and reductions in erosion and associated degradation of habitats from well-maintained trails and erosion repair sites. These beneficial impacts are anticipated to be local to regional and moderate.

In addition, implementation of the proposed project would partially satisfy the following Conservation Recommendations outlined in the 2005 USFWS Biological Opinion for the construction of ponds at Mori Point as described for the San Francisco garter snake.

Conclusion

Alternative 1 would result in short and long-term, direct and indirect, local to regional, and minor to major adverse impacts to the California red-legged frog. With the implementation of the mitigation measures and the Best Management Practices in Appendix E, which would reduce and/or minimize potential adverse impacts to California red-legged frog, the proposed actions will ultimately result in less-than-significant impacts to the species.

Overall, the proposed project “may affect/ is likely to adversely affect” the California red-legged frog, according to the ESA. This is due to the fact that although the implementation of the mitigation measures and the Best Management Practices in Appendix E would reduce and minimize impacts to the species, adverse effects such as harassment, harm, or mortality of individuals may still occur during trail work, pond construction, erosion repair, or relocation of individuals from work areas.

However, impacts considered potentially major and actions that would potentially result in a

“may affect/likely to adversely affect” determination would be short-term and construction related, and offset by the long-term benefits to the species as described below.

In contrast, the proposed project would result in long-term, local to regional, direct and indirect, minor to major beneficial impacts to the California red-legged frog. Although 0.05 acres of wetland habitat will be impacted, the construction of up to 5 new ponds (0.4 acres) would result in a net increase of 0.35 acres of aquatic habitat and an approximate ratio of 8:1 for restored to impacted habitat. Similarly, although 2.7 acres of upland habitat will be impacted, the proposed project will restore over 13.3 acres of upland habitat resulting in a net increase in 10.6 acres and a ratio of 5:1 for restored to impacted habitat. Overall, the proposed project is expected to result in net increases to the quantity, quality, and connectivity of aquatic and upland habitats. Cumulative impacts would be the same as described under Alternative 1 - *Wildlife*.

Non-listed species

Western Pond Turtle. This species is not known to occur on-site; however, it has the potential to occur in and around the existing ponds on-site.

Pond and trail construction could permanently impact 0.05 acres of Cowardin wetland habitats. However, this adverse impact would be local and minor and mitigations listed under the Biological Resources section would reduce impacts to this species.

Site-wide Management Activities are not anticipated to adversely impact existing ponds; however, they may impact habitat adjacent to ponds. Indirect impacts may include short-term disturbance/degradation, increased sedimentation, spills from equipment or vehicles, disruption of hydrologic processes providing ponded conditions, and harassment, harm or mortality of individuals, if present. Stewardship Actions may result in long-term indirect adverse impacts to the western pond turtle, if present, from ongoing activities including trail use and maintenance, invasive species removal, revegetation, trash removal, or monitoring. These impacts are anticipated to be local, short-term, and minor, especially when considering the net benefits as described under below.

Site-wide Management Actions would result in short and long-term direct beneficial impacts to the western pond turtle, if present, from the construction of up to five new ponds, resulting in the creation of 0.4 acres of pond habitat. Hydrology improvements in Special Restoration Areas A and B would allow for greater connectivity between wetland and ponded habitats. These beneficial impacts are expected to be local and major.

Trail improvements would reduce trespass and associated harassment in pond areas and would reduce sedimentation caused by run-off from non-designated trails. Invasive species removal in the vicinity of ponds would also improve native wetland habitats. These beneficial impacts are anticipated to be local and minor to moderate.

Conclusion

If the Western pond turtle is present at Mori Point, Alternative 1 may result in short and long-term, direct and indirect, local, and minor adverse impacts. With implementation of the Best

Management Practices in Appendix E and mitigation measures, potential adverse impacts would be reduced to less-than significant levels. In contrast, the proposed project would result in local, direct and indirect, major beneficial impacts to the Western pond turtle. Although 0.05 acres of Cowardin wetlands would be permanently impacted, the proposed project would create up to 0.4 acres of ponds resulting in a net increase of 0.35 acres of pond habitat and an approximate mitigation ratio of 8:1 for permanently restored to impacted habitats. Overall, the project would improve the quantity and quality of habitat for the Western pond turtle. Cumulative impacts would be the same as described under Alternative 1 - *Wildlife*.

California Horned Lizard. This species is not known to occur on-site. However, it has the potential to occur in the following habitats: Disturbed, California Sagebrush, and Coyote Brush.

Trail and pond construction may result in long-term direct adverse impacts to the California horned lizard, if present, from the permanent loss of approximately 1.9 acres of potential habitat (Table 7). This impact would be local and minor, especially considering the net benefits to described under “beneficial impacts” below.

Trail construction may result in short-term indirect adverse impacts to this species, if present, within a 12- to 15-foot buffer of trail work. As a result, approximately two additional acres of potential habitat could be temporarily degraded from dust, crew movement, or trampling. Temporary disturbance may also result from the installation of site improvements, erosion repair, debris removal, or invasive plant removal. However, these impacts are expected to be local and minor, allowing for most individuals to relocate during project activities.

Site-wide Management Actions and Stewardship Actions may result in long-term indirect adverse impacts to the California horned lizard, if present, from ongoing trail use and maintenance, invasive species removal, revegetation, trash removal, or monitoring. However, these impacts are anticipated to occur infrequently, and would be local and minor, especially when considering the net benefits to the species described below. Mitigations listed under the Biological Resources section would reduce impacts to this species.

Site-wide Management Actions would result in long-term direct beneficial impacts to the California horned lizard, if present, through the restoration of 6.9 acres of habitat. This would result in a long-term, local and minor to moderate beneficial impact to the species, if present on-site.

Stewardship Actions and Site-wide Management Actions would result a long-term indirect beneficial impacts the California horned lizard over all 110 acres due to continued improvements to native habitat species diversity and function from on-going weed control, revegetation, and monitoring; reductions in off-trail trespass and disturbance from visitors due to well-maintained, marked and signed trails; and reductions in erosion and associated degradation of habitats from well-maintained trails and erosion repair sites. These beneficial impacts are anticipated to be local and minor.

Conclusion

If the California horned lizard is present at Mori Point, alternative 1 may result in short and long-

term, direct and indirect, local, and minor adverse impacts. With implementation of the Best Management Practices in Appendix E and mitigation measures, potential adverse impacts to California horned lizard would be reduced to less-than significant levels. In contrast, the proposed project would result in long-term, local, and minor to moderate benefits to the species. Although 1.9 acres of habitat would be removed, over 6.9 acres would be restored resulting in a ratio of more than 3:1 for restored to removed upland habitat. Overall, the proposed project is expected to result in net increases to the quantity and quality of habitats that could support the California horned lizard. Cumulative impacts would be the same as described under Alternative 1 - *Wildlife*.

San Francisco Forktail Damselfly, Tomales Isopod, Ricksecker's Water Scavenger Beetle and Leech's Skyline Diving Beetle. Only one of these four species is known to occur on-site, the San Francisco forktail damselfly. However, all have some potential to occur in ponded areas, including ditches on-site.

Site-wide Management Activities may result in long-term direct adverse impacts to these sensitive aquatic invertebrates. Trail construction and deconstruction would permanently remove 0.05 acre of wetlands and temporarily impact less than 0.18 acre of wetlands. In particular, improvements to Mori Road and the ponded roadside ditches in Special Restoration Area A may result in temporary impacts to the aquatic habitat within the roadside ditches, which provide habitat for the San Francisco forktail damselfly. However, these adverse impacts are anticipated to be local and minor, especially when considering the net benefits to aquatic invertebrates as described below.

Site-wide Management Actions may include short-term, indirect impacts to adjacent existing ponds and wetland habitat from increased sedimentation, spills from equipment or vehicles, or disruption of hydrologic processes providing ponded conditions. Long-term indirect adverse impacts may occur from ongoing activities including trail use and maintenance, invasive species removal, revegetation, trash removal, or monitoring.

There would be long-term direct beneficial impacts from the construction of up to five new ponds, totaling 0.4-acres of new aquatic habitat. In addition, hydrology improvements in Special Restoration Areas A and B allowing for greater connectivity between wetland and ponded habitats, and trail improvements reducing trespass into wetlands and sedimentation from non-designated trails would greatly enhance the on-site habitat, resulting in a net benefit for these species. These beneficial impacts are anticipated to be local and minor to moderate.

Stewardship and Site-wide Management Actions would result a long-term indirect beneficial impacts to special status aquatic invertebrates due to continued improvements in native habitat species diversity and function from on-going weed control, revegetation, and monitoring; reductions in threats from toxic materials; reductions in off-trail trespass and disturbance from visitors due to well-maintained, marked and signed trails; and reductions in erosion and associated degradation of habitats from well-maintained trails and erosion repair sites. These beneficial impacts are anticipated to be local and minor to moderate.

Conclusion

Alternative 1 would result in short and long-term, direct and indirect, local, and minor adverse impacts to special-status aquatic invertebrates. With the implementation of the Best Management Practices in Appendix E and mitigation measures, impacts would be less-than-significant. In contrast, the proposed project would result in long-term, direct and indirect, local, and minor to moderate beneficial impacts. Although 0.05 acres of habitat would be removed, 0.4 acres would be created resulting in an approximate ratio of 8:1 for created to removed habitat. Overall, the proposed project is expected to result in a net increase to the quantity and quality of habitat for special-status aquatic invertebrates. Cumulative impacts would be the same as described under Alternative 1 - *Wildlife*.

Raptors and Other Special Status Birds (Including Migratory Birds)

Site-wide Management Actions such as invasive non-native plant removal would result in direct adverse impacts to raptors from the permanent removal of small trees less than 8 inches dbh (diameter at breast height). Trees greater than 8 inches dbh will be left on site and removed only after become diseased, naturally die, topple, or pose a safety hazard. This impact is considered local and minor, because all large trees will be left standing, and many other potential breeding habitats exist within in the project area vicinity.

Site-wide Management Actions such as trail construction, restoration and removal, pond construction, erosion repair, and weed and debris removal may result in short-term indirect adverse impacts to raptors and other special status birds protected under the MBTA. Equipment and vehicle noise and vibration, crew movement, and other disturbances from project activities have the potential to cause nest abandonment and death of young or loss of reproductive potential at active nests that may be located within or near the project site. Stewardship Actions may result in long-term indirect adverse impacts from ongoing activities including trail use and maintenance, invasive species removal, revegetation, trash removal, or monitoring. However, these impacts are anticipated to occur infrequently, and would be local and minor. Bird species that only utilize the site for foraging or other non-breeding activities may be temporarily disturbed by project activities; however, these temporary indirect impacts are negligible. Implementation of mitigation measures (below) would reduce these impacts to less-than-significant.

The following measures will be implemented to minimize and/or avoid disturbance to raptors and other special status birds during implementation of Site-Wide Management Actions.

Mitigation Measures:

- Project activities including vegetation removal, grading, earth movement, or other activities involving mechanized equipment shall not be conducted during the bird-nesting season, from March 1 through July 31st, unless a qualified biologist conducts a pre-project survey for nesting birds and determines that birds are not nesting within the project area. All pre-project surveys would be coordinated with the GGNRA Wildlife Ecologist. To the greatest extent possible, these activities will be planned and conducted outside bird-nesting season. If work is necessary during the bird-nesting season, vegetation shall be removed to a height of less than 8 inches prior to

the nesting season (March 1st through July 31st) and throughout project activities to discourage the nesting of ground-dwelling bird species.

- In order to protect nesting raptors, trees shall not be removed between January 1st and July 31st unless qualified personnel conduct a pre-project survey for nesting birds and determine that birds are not nesting within the project area. If nesting raptors are detected, a qualified biologist will delineate a suitable buffer.

Beneficial impacts to raptors and migratory birds are expected to be indirect. Site-wide Management Actions, including restoration and non-native plant removal, would result in long-term indirect beneficial impacts to raptors and other special status birds from the restoration of on-site habitats, which would provide improved foraging and/or nesting opportunities. Long-term stewardship actions, including invasive species removal would further increase the quality of native plant communities for foraging and breeding habitat throughout the 110 acre site. These beneficial impacts are anticipated to be local and regional and moderate.

Cumulative Impacts

Cumulative impacts would be as described under wildlife, except for the following: One possible minor adverse cumulative impact may result from proposed project actions to potential raptor nesting habitat due to the removal of small non-native, invasive trees less than 8 inches dbh. In addition, approximately 20% of the eucalyptus trees within the Sharp Park Natural Area are proposed for removal, along with the probable removal of other trees from future development projects. However, this cumulative impact is considered minor, as available habitat exists on-site and in the surrounding area.

Conclusion

Alternative 1 would result in short and long-term, direct and indirect, local, and minor adverse impacts to raptors and migratory birds. With the implementation of the Best Management Practices in Appendix E and mitigation measures, impacts would be less-than-significant. In contrast, the proposed project would result in long-term, direct and indirect, local and regional, and moderate beneficial impacts. Overall, the proposed would result in a net increase to the quantity and quality of foraging habitat for certain raptors and breeding and foraging habitat for other raptors and migratory birds. In addition, large trees would remain on-site providing breeding habitat for raptors requiring large trees.

San Francisco Dusky-footed Woodrat. Although this species has not been reported within the Project Area, potential habitat for the San Francisco dusky-footed woodrat exists within the Monterey pine and cypress groves on-site.

Site-wide Management Actions such as invasive non-native plant removal may result in long-term direct adverse impacts to San Francisco dusky-footed woodrat, if present, from the removal of non-native invasive trees (only small trees less than 8 inches dbh will be removed) which could provide potential nesting habitat for the species. Trees greater than 8 inches dbh will be left on site and removed only after become diseased, naturally die, topple, or pose a safety hazard. However, this impact is considered local and minor the incorporation of mitigation measure (below) such as pre-construction surveys and nest protection or management (Appendix E).

Mitigation Measure: Prior to implementation of proposed project activities, conduct visual surveys within the Monterey pine and cypress groves on-site to determine the presence or absence of woodrat nests. If woodrat nests are located during this survey, avoid the nest(s) and establish a minimum protection buffer of 50 feet around each nest. Project activities requiring grading, mechanized equipment or vehicles, or large crews within the 25-foot protective buffer should only occur during the non-breeding season (October-November) to avoid noise impacts to any breeding woodrats that may occupy the nest from December through September. If project activities cannot avoid impacting or removing the nest, then the nest(s) should be dismantled by hand prior to grading or vegetation removal activities. The nest dismantling shall occur during the non-breeding season (October-November) and shall be conducted so that the nest material is removed starting on the side where most impacts will occur and ending on the side where the most habitat will be undisturbed, which will allow for any woodrats in the nest to escape into adjacent undisturbed habitat. If young are encountered during nest dismantling, the dismantling activity should be stopped and the material replaced back on the nest and the nest should be left alone and rechecked in 2-3 weeks to see if the young are out of the nest or capable of being out on their own (as determined by a qualified biologist); once the young can fend for themselves, the nest dismantling can continue.

Site-wide Management Action may also result in short-term indirect adverse impacts to the species, if present, from tree removal activities (such as physical vegetation removal, tree felling, use of loud equipment and vehicles) which may temporarily impact the species or its nests. Other Site-wide Management Actions, such as trail construction/restoration and removal, pond construction, erosion repair, and debris removal may also impact the species, if present, due to noise, vibration, crew movement and similar disturbances if such activities occur in close proximity to nests. However, these indirect impacts are expected to be short-term, local and minor, due to timing restrictions on construction and non-native tree removal activities, pre-construction surveys and nest protection or management, as given in the Best Management Practices in Appendix E.

Site-wide Management and Stewardship Actions may result in long-term indirect adverse impacts to San Francisco dusky-footed woodrat, if present, from ongoing activities including trail use and maintenance, invasive species removal, revegetation, trash removal, or monitoring. However, these impacts are anticipated to occur infrequently, and would be local and minor, especially considering the beneficial impacts described below.

Stewardship and Site-wide Management Actions would result in long-term indirect beneficial impacts to the dusky-footed woodrat due to continued improvements in native habitat species diversity and function from on-going weed control, revegetation, and monitoring; reductions in off-trail trespass and disturbance from visitors due to well-maintained, marked and signed trails; and reductions in erosion and associated degradation of habitats from well-maintained trails and erosion repair sites. These Long-term Stewardship actions would occur over all 110 acres at Mori Point. These beneficial impacts are anticipated to be local and minor.

Cumulative Impacts

Cumulative impacts would be as described under wildlife, except for the following: One possible adverse cumulative impact may result from proposed project actions to potential dusky-footed woodrat nesting habitat due to the removal of invasive non-native trees (only small trees less than 8 inches dbh will be removed). In addition, approximately 20% of the eucalyptus trees within the Sharp Park Natural Area are proposed for removal, along with the probable removal of other trees from future development projects. However, this cumulative impact is considered minor, as available habitat exist on-site and in the surrounding area.

Conclusion

If the San Francisco woodrat is present at Mori Point, alternative 1 would result in short and long-term, direct and indirect, local, and minor adverse impacts. In contrast, the proposed project would result in long-term, direct and indirect, local, and minor beneficial impacts. With the implementation of the Best Management Practices in Appendix E and mitigation measures, impacts would be less-than-significant .

American Badger. Although this species has not been reported within the Project Area, potential habitat for the American badger occurs within most on-site habitats.

Site-wide Management Actions may result in long-term direct adverse impacts to American badger, if present, from trail construction and habitat restoration, resulting in the permanent loss of 2.7 acres of shrub, forest and herbaceous potential habitat (Table 7). These restoration activities may also result in short-term direct adverse impacts to potential habitat; however, these impacts would be temporary, local and minor, especially when considering the net benefits to the species described in “beneficial impacts” below.

Site-wide Management Actions may result in short-term indirect adverse impacts to this species, if present, during trail construction and habitat restoration resulting in temporary disturbance due to habitat degradation from dust, crew movement and trampling. These impacts may also result from installation of site improvements, erosion repair activities, debris removal or invasive plant removal activities. Ongoing activities, including trail use and maintenance, invasive species removal, revegetation, trash removal, or monitoring, may result in long-term indirect adverse impacts to American badger. All adverse impacts are expected to be local, minor, temporary, and less-than-significant with the implementation of the mitigation measure below.

Mitigation Measure: Prior to implementation of proposed project activities, conduct visual surveys on-site to determine the presence or absence of suitably sized burrows for badgers. If potential badger burrows are located on-site, surveys will be conducted at each burrow to determine the presence or absence of badgers. If badgers are determined to be present, a qualified biologist will be consulted to determine appropriate buffer distances from each occupied burrow to maintain during project activities, and possible project timing restrictions to avoid impacts to birthing individuals (most young are born in March and April⁷). If avoidance of impacts to occupied burrows is not feasible, then a

⁷ Long 1973 (Long, C. A. 1973. Taxidea taxus. Mammal. Species. No. 26. 4pp.), “California's Wildlife, Mammals, Badger. California Wildlife Habitat Relationships System, California Dept. of Fish and Game, 1983.”

qualified biologist shall implement a pre-construction program during the non-birthing season (Summer through Winter) to exclude badgers from their burrows by closing each burrow once the badger has emerged.

Site-wide Management Actions would result in a long-term direct beneficial impact to American badger, if present, through the restoration of more than 13.3 acres of potential habitat. These beneficial impacts to the American badger, if present on-site, are expected to be local and minor to moderate.

Stewardship and Site-wide Management Actions would result long-term indirect beneficial impacts to the American badger, if present, due to continued improvements in native habitat species diversity and function from on-going weed control, revegetation, and monitoring; reductions in off-trail trespass and disturbance from visitors due to well-maintained, marked and signed trails; and reductions in erosion and associated degradation of habitats from well-maintained trails and erosion repair sites. Long-term Stewardship actions would occur over all 110 acres at Mori Point. These beneficial impacts are anticipated to be local and minor to moderate.

Conclusion

If the American badger is present at Mori Point, alternative 1 may result in short and long-term, local, direct and indirect, minor adverse impacts. With implementation of the Best Management Practices in Appendix E and mitigation measures, potential adverse impacts to California American badger would be reduced to less-than significant levels. In contrast, the proposed project is expected to result in short and long-term, local, direct and indirect, minor to moderate beneficial impacts. Although 2.7 acres of potential habitat is being impacted, 13.3 acres would be restored resulting in an approximate ratio of more than 4:1 for restored to removed habitat. Overall, the project is expected to result in net increases to the quantity and quality of habitat for the American badger. Cumulative impacts would be the same as described under Alternative 1 - *Wildlife*.

Alternative 2 – Special Status Species Impacts

No Special Status Plants exist at the site; impacts would be the same as described under Alternative 1.

The majority of the proposed short-term and long-term activities for Alternative 2 are identical to those proposed for Alternative 1. Therefore impacts from these activities under Alternative 2 would be identical to the impacts described under Alternative 1. However, the trail use designations are more limited under Alternative 2 than under the Preferred Alternative. The trail use designations would result in 2.4 miles of trails that would be “hiker only” as compared to 1.3 miles of hiker-only trails in Alternative 1. This would likely result in less visitor traffic and reduced potential for off-trail trespass by bicycles and horses (or by hikers to avoid bicycles and horses) along the “hiker only” trail segments, thereby reducing the potential for habitat/vegetation trampling, wildlife disturbance, and erosion/sedimentation. This reduction in potential impacts would be most substantial along the Bowl Trail, as this areas supports some of the most sensitive wetland and pond habitats on-site, which provide habitat for federally listed

species. However, the reduction of these potential impacts under Alternative 2 is not quantifiable.

Conclusion

Differences in impacts to biological resources between Alternative 2 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 2. Cumulative impacts would be the same as described under Alternative 1 – *Wildlife* and *Special Status Species*.

Alternative 3 – Special Status Species Impacts

No Special Status Plants exist at the site; impacts would be the same as described under Alternative 1.

The majority of the proposed short-term and long-term activities for Alternative 3 are identical to those proposed for Alternative 1. Therefore impacts from these activities under Alternative 3 would be identical to the impacts described under Alternative 1. However, these trail use designations under Alternative 3 would result approximately 3.5 miles of trails that would be designated “multiple-use” as compared to “hiker only” under Alternative 1. This increase in trail use options would likely result in increased potential for off-trail trespass by bicycles and horses (or by hikers to avoid bicycles and horses) along the Peak Trail, Point Trail, the Coastal Trail Coastal Connector Trail, and the Ridge Trail, thereby increasing the potential for habitat/vegetation trampling, wildlife disturbance, and erosion/sedimentation (particularly in “Special Restoration Area C”, the erosion repair site along the Peak Trail). However, the increase of these potential impacts under Alternative 3 is not quantifiable.

Conclusion

Differences in impacts to biological resources between Alternative 3 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 3. Cumulative impacts would be the same as described under Alternative 1 – *Wildlife* and *Special Status Species*.

Alternative 4 – Special Status Species Impacts

No Special Status Plants exist at the site; impacts would be the same as described under Alternative 1.

Under the No Action Alternative (Alternative 4), none of the proposed actions would be implemented within the Project Area. Therefore, no trail construction, restoration, or removal would occur, no ponds would be built, no improvements would be made to improve on-site hydrologic connectivity, no invasive non-native plants would be removed, no trash or debris would be removed, no areas of erosion would be repaired, no programmatic site improvements would be implemented, no monitoring or maintenance would occur, and no community training or education would be implemented. As a result, no negative impacts would occur to biological resources from these activities from equipment, vehicle or crewmember disturbances, habitat removal, harm, or mortality. However, impacts to biological resources from continued

uncontrolled visitor use along the many non-designated trails, and especially from illegal off-road vehicle use, would continue to result in possible disturbance and mortality to wildlife and special status wildlife, and degradation (from trampling and erosion) to wildlife habitats, native plant communities and wetlands.

Wildlife habitat and native plant communities would remain unchanged initially, but because additional native plant communities might not be restored due to trash/debris removal, weed removal, and planting, no additional benefits to wildlife could be expected or ensured. Over the long-term, the distribution and species composition of wildlife habitats, vegetation and native plant communities would change due to further encroachment by invasive, non-native plant species. Active restoration activities such as soil decompaction and planting would not occur in the Disturbed habitat, and therefore, there would be no net increase in 5.4 acres of native plant communities.

Uncontrolled visitor use and the lack of active habitat restoration would result in the slow loss and degradation of suitable foraging, aestivation, upland, and wetland habitat for California red-legged frog, San Francisco garter snake, and other special status wildlife from ongoing visitor use (non-designated trail development, erosion, trash, invasive plant encroachment, illegal uses such as off-road vehicle and off-road bicycle use). There would be no net benefit to these from pond construction or hydrology connectivity improvements. In addition, without active management, the grassland habitats used for upland aestivation and dispersal for California red-legged frog and San Francisco garter snake, as well as some special status birds, would continue to be lost as converts to scrub habitat over time.

Conclusion

Alternative 4 is not anticipated to result in impacts to special status plants. Alternative 4 may result in long-term, adverse, indirect, minor to major, local to regional impacts to special status wildlife species, including the San Francisco garter snake, the California red-legged frog, the Western pond turtle, the California horned lizard, special status invertebrates, raptors and migratory birds, the San Francisco dusky-footed woodrat, and the American badger. These impacts may be considered significant if the lack of active site management, the continued encroachment of non-native plants, and continued illegal site activities allow on-site habitats for these species to become uninhabitable and/or severely degraded.

Overall, Alternative 4 “may affect/ is likely to adversely affect” the San Francisco garter snake and California red-legged frog, according to the federal Endangered Species Act, as continued illegal activities would continue to threaten these species through habitat degradation and possible harm, harassment or mortality. Cumulative impacts would be the same as described under Alternative 4 – *Wildlife and Special Status Species*.

TABLE 7. ACRES OF VEGETATION ALLIANCES WITHIN THE PROPOSED ACTION AREA, AND ESTIMATED ACRES OF IMPACTS FROM THE PROPOSED PROJECT ACTIONS.

Vegetation Alliance (N=Native)	Total On-Site (acres)	Permanent Trail Footprint	Temporary Trail Impacts	Social Trail Removal	Erosion Repair	Pond Building	Debris/Trash Removal	Habitat Restoration	Acres of Permanent Removal	% of Total On-site	Acres of Temporary Impact	% of Total On-site
Disturbed	10.4	1.2	1.2	1.2	1.3	<0.1	0.1	2.9	1.2	12%	6.6 ⁸	63%
Arroyo Willow (N)	3.6	<0.1	<0.1	<0.1	<0.1				<0.1	≤1%	0.1	≤1%
California Annual Grassland	7.4	0.1	0.3	0.7			0.5	0.2	0.3	3%	1.8	26%
California Oatgrass (N)	1.0	<0.1	<0.1	<0.1	<0.1				<0.1	≤1%	0.1	≤1%
California Sagebrush (N)	1.1	<0.1					0.1		<0.1	≤1%	0.1	9%
Cattail	0.7									0%		0%
Coyote Brush (N)	47.3	0.6	0.8	1.7	3.3	0.1	0.1	0.2	0.7	1%	6.1	13%
Monterey Cypress/Pine	8.0	0.1	0.2	0.2	0.4				0.1	1%	0.7	10%
Purple Needlegrass (N)	23.4	0.4	0.7	0.3	0.1			<0.1	0.4	2%	1.1	5%
Red Fescue (N)	1.1									0%		0%
Rush (N)	0.9									0%		0%
Small-fruited Bulrush (N)	0.1									0%		0%
Bluffs	1.3	<0.1	<0.1						<0.1	≤1%	<0.1	≤1%
Water (built ponds)	0.1					<0.1				≤1%		0%
Totals	106.5	2.5	3.3	4.1	5.0	0.3	0.8	3.3	2.7	2%	16.6	15%

⁸ The 6.5 acres of temporary impact for the Disturbed alliance would actually be restored to native habitats during and/or following project implementation.

3.6.5 Impairment – Biologic Resources

The proposed project is not expected to produce major, adverse impacts to a resource or value whose conservation is: 1) necessary to fulfill specific purposes identified in the establishing legislation of the GGNRA; 2) key to natural or cultural integrity of the park; or 3) identified as a goal in GGNRA's General Management Plan or other relevant National Park Service planning documents. Therefore, there would be no impairment on the area's biological resources.

3.7 Cultural Resources

3.7.1 Affected Environment

3.7.1.1 Historic Context

In this section, the property boundary is considered the Area of Potential Effect (APE).

The Calera Creek watershed to the south of Mori Point has seen a broader range of historic activity than the Laguna Salada watershed to the north. Noteworthy historic properties in the vicinity of parklands include the possible location of the Ohlone village of *Timigtac*. Near this site colonial Spanish rediscovered limestone quarries developed during the pre-contact period.

In about 1786 the Spanish mission of *San Francisco de Asis* established an *asistencia*, or agricultural outpost, called *San Pedro y San Pablo* in the San Pedro Valley, presumably at the indigenous village of *Pruristac*. Barley, corn and beans were among the crops produced for the mission here, and by the 1790s as many as 6,000 head of cattle were stationed in the area (Chavez, Dietz, and Jackson 1974:6-11). A serious epidemic befell the mission and outpost in the mid 1790s, and by 1817 the *asistencia* for San Francisco had been moved to San Rafael. There is some indication that the site was still occupied by Ohlone in 1828 (Chavez, Dietz, and Jackson 1974:11).

In 1838 the land around Mori Point was granted to Francisco Sanchez as Rancho San Pedro. The map showing the land grant also notes a *calera* [limepit or quarry] on Mori Point just outside the southern property boundary. Limestone was used for creating whitewash for the adobe buildings of the Spanish and Mexican periods, and reputedly was used on the first structures at the Presidio of San Francisco in 1776, and at the San Francisco Mission, its outpost *San Pedro y San Pablo*, and other residences including the Sanchez adobe nearby (cf. Clark 2002:7; also Azevedo 1997, San Mateo County 1980, and Quarry Products 1976). Francisco Sanchez owned the *calera* at Mori Point until at least 1868 (Clark 2002). An 1838 map of the location also identifies the coastal lagoon of *Laguna Salada* whose drainage defines the parklands north of Mori Point.

Within the APE, portions of Mori Road have existed since at least 1869. In 1899 USGS maps show the road extending east to the coast from the county road that paralleled the coast at that time. The northern side of Mori Point is within the historic watershed of the coastal lagoon of Laguna Salada. The watershed was also known historically as Salt Lake Valley, and then Salt Valley since 1896.

The Stefano Mori family, for whom the land is now named, emigrated from Italy and settled in Pacifica in the 1870's. The Mori's purchased the property in the 1880's and built a farmhouse at the then end of Mori Road. Although the Mori family started as farmers, growing brussel sprouts, cabbage and artichokes and raising cattle and horses, they constructed a roadhouse and inn at the start of the 20th century (GGNPC 2005). Jack Mori is believed to have constructed the roadhouse and inn on what was then called Salada Beach (<http://www.smccd.net/accounts/case/sweeneyridge/mori.html>).

The date of construction of the Mori Inn is uncertain, but there appears to have been an extension to the Mori Road between 1899 and 1939, which alludes to its origin. Maps do not formally show the structure until 1949. Only three residences are shown within the APE before 1915. None of these are in the location of the Mori Point Inn. It is possible that the Mori Inn either already existed or emerged around 1910 from activities of the grounds keeper of Laguna Salada, Steve Mori, who was in charge of the location when he shot and killed a barber from San Francisco for trespassing (Colma Record 1910). He was discharged by a hung jury a month later (Colma Record 1911). Regardless of origin, the secluded location may evince some of the nature of its historic function, as does the alleged raid during the prohibition in 1923, which resulted in the confiscation of 23,000 bottles of whiskey by federal agents.

Construction of the Ocean Shore Railroad between San Francisco and Santa Cruz began in 1905 and provided rail support for coastal farm produce, and for the quarried stone of Mori Point as noted by a specialized rail spur to the quarries on Calera Creek. Economic speculation associated with the railroad resulted in efforts to develop a resort named after Laguna Salada. A promenade, bandstand, hotels, casinos, and cafes were envisioned, but the ruins of a dance pavilion in the lagoon and some bath houses were all that remained following the closure of the railroad in 1920 (Wagner 1974). In the 1920s and 1930s the quarry caused quite a bit of local consternation with its blasting, until use of explosives was halted by court order (Hunter 1997:13).

The Sharp Park Golf Course, adjacent to Mori Point lands on the north side of Salt Valley, opened in 1931. It was originally designed by architect Alister Mackenzie and landscaped by John McLaren. Construction of Highway 1 began in about 1919 and the highway was formally opened in 1938. Within the APE, it followed the course of the Ocean Shore Railroad crossing the same saddle of Mori Ridge that had at least been used by the coastal road since the 1830s. By 1939 a secondary road existed between the location of the Mori Point Inn and Sharp Park. At that time Laguna Salada extended south to the lowland below the Mori Inn.

Some time after 1942, the Rockaway Quarry, Inc. established a rock quarry at the historic limestone quarry on the Calera Creek side of Mori Point (Logan 1947). Quarrying operations were eventually extended to the north and west portions of Mori Point. An aerial photo from 1943 shows that the majority of Mori Point was without roads and improvements other than fences for range purposes. No roads appear on the slopes of Mori Point until about 1949; a dirt spur road extends off Mori Road and meanders onto the ~100 foot contour above the cove just north of the Mori Point Inn. This road is the first instance of quarrying operations on the north and west sides of Mori Point.

By 1956, a completely separate road parallel to Mori Road had been built to access the extensive gravel quarries of the Rockaway Quarry Company on the north side of Mori Point. By this time quarry operations covered much of the north and west facing sides of Mori Point. Nonetheless, vestiges of the southern end of Laguna Salada were still visible, and may have been used as a swimming or fishing pond as evidenced by a road to the location from the Mori Inn site. The West Fairway Park subdivision was completed in 1958.

The Mori Inn burned to the ground in 1966, and just a few years later the main quarry operations on the north side of Mori were gone. Some of the gravel dredging seems to have continued on the western side of the Point. By the 1970s the majority of quarrying returned to the Calera Creek side of the area, where it continued until the close of operations in the 1980s under Quarry Products, Inc (Clark 2002).

3.7.1.2 Archaeological Sites

The following information regarding archaeological research within the APE was taken from existing sources and acquired through the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) at Sonoma State University.

This information, and archaeological surveys of the Mori Point APE, resulted in the identification of many modern features, mainly associated with quarrying operations at the Point within the last 60 years. These properties are considered historically insignificant and ineligible for listing on the National Register of Historic Places (NRHP.) No important historic or prehistoric sites were found that would be impacted by the Mori Point project.

Archaeological Sites within the APE

CA-SMA-114

Only one archaeological property has been documented within the Mori Point lands acquired by the National Park Service in 2002. This site, listed by CHRIS as CA-SMA-114 (P-41-000116), was recorded in 1969, but was not found in subsequent surveys in 1978 (Flynn), 1986 (Holman), 2002 (Clark), and 2005 (Barker). It was described as a sandy shell midden approximately 2-3' in depth that was exposed on the ground over an approximately 10 square yard area. The site contained unspecified bone, chert debitage from tool manufacturing, fire fractured rock, but also historic bottle glass and other unidentified historic materials. The site was also noted as extremely disturbed from both erosion and building construction associated with the Mori Inn. This feature was entered into the GGNRA Archaeological Resources Geographic Information System (ARGIS) for project monitoring and planning.

3.7.2 Environmental Consequences

3.7.2.1 Alternative 1

Currently, no known archeological resources exist within the APE of the Mori Point Project and the project will not impact any historic resources. Therefore, no adverse impacts to cultural resources are anticipated, though the GGNRA will continue to monitor areas of previous historic

significance during ground disturbing activities.

Long-term beneficial impacts to cultural resources will result from the interpretation of ethnohistoric, indigenous, colonial Spanish, Mexican, and more recent uses of Mori Point, via public programs. Beneficial impacts are expected to be local and regional, and minor.

Cumulative Impacts

Since the proposed project would not have any adverse impacts to archaeological or historic resources, the proposed project would not contribute cumulatively to any adverse impacts that have occurred to cultural resources from other regional projects.

Conclusion

Adverse impacts to cultural resources are not anticipated. The preferred alternative would result in regional, long-term, minor, and indirect beneficial impacts to cultural resources.

3.7.2.2 Alternative 2

All of the proposed actions under Alternative 1 would also be conducted under Alternative 2; however, trail use designations under Alternative 2 would be more limited than under Alternative 1 (more “hiker only” trail segments). Therefore, impacts to cultural and archaeological resources are not anticipated to differ from those described under Alternative 1.

Conclusion

Differences in impacts to cultural resources between Alternative 2 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 2. Cumulative impacts would be as described under the Preferred Alternative.

3.7.2.3 Alternative 3

All of the proposed actions under Alternative 1 would also be conducted under Alternative 3; however, trail use designations under Alternative 3 would be less limited than under Alternative 1 (all trails would be “multiple-use”). Therefore, impacts to archaeological resources are not anticipated to differ from those described under Alternative 1.

Conclusion

Differences in impacts to cultural resources between Alternative 3 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 3. Cumulative impacts would be as described under the Preferred Alternative.

3.7.2.4 Alternative 4 (No Action Alternative)

The No Action Alternative would mean that no proposed project actions would occur on-site; therefore, this alternative would not result in any impacts to archaeological resources.

Conclusion

Under the No Action Alternative, no adverse impacts to cultural resources are anticipated. Similarly, no beneficial impacts are anticipated. Cumulative impacts would be as described under the Preferred Alternative.

3.7.2.5 Impairment

The proposed project is not expected to produce major, adverse impacts to a resource or value whose conservation is: 1) necessary to fulfill specific purposes identified in the establishing legislation of the GGNRA; 2) key to natural or cultural integrity of the park; or 3) identified as a goal in GGNRA's General Management Plan or other relevant National Park Service planning documents. Therefore, no impairment to archaeological resources would occur.

3.8. Public Safety

3.8.1 Affected Environment

The protection of human life will take precedence over all other management actions as the NPS strives to protect human life and provide for injury free visits. The NPS will reduce or remove known hazards and apply appropriate measures to provide a healthful and safe environment for visitors (NPS Management Policies Chapter 8.2). Currently, the public uses the Project Area for recreational purposes including, dog walking, hiking, bicycling, equestrian, and illegal off-road vehicle use. Currently, existing trails and roads are not actively managed. Mori Road is available for emergency vehicle access. Two constructed ponds exist on-site which may provide habitat for mosquitoes.

3.8.2 Environmental Consequences

3.8.2.1 Alternative 1

Mosquito Control. The enhancement of habitat for the endangered San Francisco garter snake and the threatened California red-legged frog is one of the main goals for restoration at Mori Point. Central to meeting this goal is the creation and expansion of ponds on the site to provide more habitat for frogs and more food resources for the San Francisco snake. However, the construction of additional ponds may result in increased breeding habitat for mosquitoes, which may result in impacts to public safety due to possible increased transmission of diseases to humans.

GGNRA staff has met with representatives from the San Mateo County Mosquito Abatement District (SMCMAD) to discuss measures to minimize mosquito production related to the creation of new frog ponds, consistent with Recovery task 11.8 from the *Recovery Plan for the California Red-Legged Frog* (FWS 2002). The SMCMAD has indicated that the contribution of the small frog ponds would be minor compared to the overall production of mosquitoes from the Laguna Salada, Horse Stable Pond, and creek/wetland complex. Based on adult trapping conducted in 2004, they have had high mosquito production from this area. They have recommended monitoring mosquito larvae and possible application of a short-lived (active 24-

hours) biological control agent (*Bacillus thuringensis*) on all wetlands at the Mori Point area.

Representatives of the SMCMAAD have also recommended habitat design measures to minimize mosquito production; however, these conflict with the ability of the created habitat to provide value for amphibians since aquatic vegetation is used as an egg attachment substrate and provides cover. To reduce impacts from creation of the ponds, the following mitigation will be employed.

Mitigation Measure: As per recommendation from the SMCMAAD, mosquito populations would be monitored and if necessary, application of *Bacillus thuringensis* would be implemented.

Emergency Vehicular Access. No adverse impacts to Public Safety are anticipated from the proposed project regarding emergency vehicular access to the site. The GGNRA Chief of Visitor and Resource Protection reviewed all of the trail alternatives for consideration of vehicle access in an emergency event. Mori Road and the “sea wall road” meet all basic emergency access needs, as they provide access in the event of a law enforcement-related incident, emergency medical or search and rescue incident, or a wildland fire. In the event of a crisis event along the Point or southern coastal edge, emergency vehicles would access the site using the main artery of the California Coastal Trail along the City of Pacifica’s sea wall.

Visitor Safety. The proposed project activities may temporarily increase potential impacts to visitor safety during trail work, erosion repair, pond construction, hydrology improvements, or debris and weed removal. The proposed project would result in a net benefit to visitor safety, as the final trails would be constructed to GGNRA trail standards and would include signs to promote safe trail use. Furthermore, the removal of non-designated trails, the stabilization of erosion areas, and the removal of debris would reduce overall potential hazards to visitors.

Mitigation Measure: Advanced notification of construction work, detour signage, and construction fencing will be implemented to restrict visitors from hazardous areas during construction.

Cumulative Impacts

The cumulative impacts of this project on the mosquito population is small given the size of the ponds to the size of the adjacent creek, pool and wetland complex. Given that the pools would likely be treated with *Bacillus thuringensis* to minimize mosquito production, the cumulative impact is negligible.

Conclusion

Adverse impacts to public safety are negligible and less-than significant. The preferred alternative would result in local, long-term, moderate, and direct beneficial impacts to visitor safety.

3.8.2.2 *Alternative 2*

Alternative 2 may provide a more beneficial impact to visitor safety as compared to Alternative 1 due to the reduced potential for collisions or encounters between hikers, bicyclists and equestrians on the more numerous hiker only trails.

Conclusion

With implementation of the above mitigation measures, adverse impacts to public safety are not anticipated and would be less-than significant. The preferred alternative would result in local, long-term, moderate, and direct beneficial impacts to visitor safety. Cumulative impacts would be as described under the Preferred Alternative.

3.8.2.3 *Alternative 3*

The potential impacts to public safety under Alternative 3 may be more as compared to Alternative 1 regarding visitor safety due to the increased potential for collisions or encounters between hikers, bicyclists and equestrians on the more numerous multiple-use trails.

Conclusion

With implementation of the above mitigation measures, adverse impacts to public safety are not anticipated and would be less-than significant. Alternative 3 would result in local, long-term, moderate, and direct beneficial impacts to visitor safety. Cumulative impacts would be as described under the Preferred Alternative.

3.8.2.4 *Alternative 4 (No Action Alternative)*

If the proposed project is not implemented, there would be no potential increase in mosquitoes due to the construction of additional ponds; however, visitor safety hazards would remain unchanged due to the continued presence of unimproved trails, non-designated trails, erosion areas, debris/trash, and off-road vehicle use.

Cumulative Impacts

This alternative is not expected to result in any cumulative impacts.

Conclusion

Under Alternative 4, safety hazards would remain as described in the affected environment section. These impacts are considered to be local, long-term, direct and indirect, and minor to major. The No Action alternative would not result in beneficial impacts to visitor safety.

3.9 Air Quality

3.9.1 Affected Environment

The California Air Resources Board establishes air quality and emission standards and rules for Air Quality Management Districts (AQMDs) based on EPA guidelines under the Clean Air Act.

AQMDs are responsible for implementing local air quality controls and issuing permits for modifications or for new sources of air pollution. The project is located within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The Bay Area is in attainment for all national standards set forth in the Clean Air Act, but is in non-attainment (i.e. currently experiences violations) for California standards for two pollutants with respect to state and national ambient air quality standards for ozone, as well as state standards for respirable particulate matter (PM¹⁰).

Mori Point's location allows for excellent air circulation due to prevailing westerly winds. Because there are no large pollution sources near Mori Point, the air moving into the area is of a very high quality. PM¹⁰ levels reflect dust from soil disturbance and along paved and unpaved roads, smoke from wood fires, and aerosol from ocean spray. Internal combustion engines and vehicular use are also contributors.

3.9.2 Environmental Consequences

3.9.2.1 *Alternative 1*

The implementation of the preferred alternative would not generate new long-term air emissions and would not require permitting through the BAAQMD. It would not affect or increase traffic and would not change existing vehicle emissions.

Construction of a short boardwalk/bridge on Mori Road in the "bowl" area and re-graded trails may generate dust from fugitive sources, which could have minor, temporary effects on air quality. Fugitive sources are those emissions, such as vehicle travel over unpaved surfaces, which are released through means other than through a stack or tailpipe, and lesser amounts of other criteria air pollutants primarily from operation of heavy equipment. With respect to emissions sources other than fugitive dust, the related emissions are generally included in the emissions inventory that is the basis for regional air quality plans. These would not be expected to impede attainment or maintenance of ozone and carbon monoxide standards in the Bay Area (BAAQMD 2000). Fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. To reduce construction-generated particulate matter (PM¹⁰) emissions, the NPS would implement as appropriate the BAAQMD's recommended control measures for emissions of dust during construction (see Fugitive Dust Control Measures under Air Quality BMP in Appendix E). Implementation of these measures would result in construction impacts on air quality that would be considered negligible.

Cumulative Impacts

Construction activities related to the cumulative projects could contribute cumulatively to dust and other emissions, which would have minor, temporary effects on air quality within the Air Basin. Since the BAAQMD requires implementation of various control actions to minimize these effects, the cumulative projects' contribution to basin-wide construction emissions would not be collectively significant.

Conclusion

The preferred alternative would have negligible, short-term adverse effects on air quality.

3.9.2.2 Alternative 2

All of the proposed actions under Alternative 1 would also be conducted under Alternative 2. Therefore, impacts to air quality are not anticipated to differ from those described under Alternative 1.

Conclusion

Differences in impacts to air quality between Alternative 2 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 2. Cumulative impacts would be as described under the Preferred Alternative.

3.9.2.3 Alternative 3

All of the proposed actions under Alternative 1 would also be conducted under Alternative 3. Therefore, impacts to air quality are not anticipated to differ from those described under Alternative 1.

Conclusion

Differences in impacts to air quality between Alternative 3 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 3. Cumulative impacts would be as described under the Preferred Alternative.

3.9.2.4 Alternative 4 (No Action Alternative)

Under the No Action Alternative, there would be no construction-related dust impacts, and Bay Area Air Quality Management District (BAAQMD) recommended control measures for emissions of dust would not be required.

Cumulative Impacts

There would be no cumulative impacts associated with the No Action Alternative.

Conclusion

No adverse or beneficial impacts to air quality are expected from the No Action Alternative.

3.9.2.5 Impairment

The proposed project is not expected to produce major, adverse impacts to a resource or value whose conservation is: 1) necessary to fulfill specific purposes identified in the establishing legislation of the GGNRA; 2) key to natural or cultural integrity of the park; or 3) identified as a goal in GGNRA's General Management Plan or other relevant National Park Service planning documents. Therefore, no impairment to air quality would occur.

3.10 Visitor Use and Recreation

3.10.1 Affected Environment

Pacifica residents have enjoyed access to the 110-acre Mori Point property for decades prior to, and since, the inclusion of the site into the GGNRA. Recreational uses have included walking, hiking, bicycling, jogging, dog walking, off-road vehicle riding, and observing the spectacular views of the Pacific Ocean and coastal landmarks to the north and south.

Visitors to the site can enter from the north via the existing Coastal Trail alignment along the seawall or from three existing entry points near the adjacent subdivision and the Moose Lodge. A network of 6.0 miles of undesignated trail exists on the property stemming from the site's historic quarrying operations and years of unregulated visitor use; these trails are not maintained and are not part of the NPS official trail system. All uses at the site are currently unmanaged and unregulated, which in some cases has negatively impacted the site's trail conditions, habitat value and other natural resources. Current trail conditions are inconsistent, with unstable slopes, deep ruts, and impassable sections during wet seasons.

3.10.2 Environmental Consequences

3.10.2.1 *Alternative 1*

Site-wide Management Actions may result in short-term, direct and indirect impacts to the recreational resources at Mori Point. Possible adverse impacts related to short-term construction and associated noise could temporarily detract from the visitor experience. Access through Mori Road to the beach would be re-routed during possible construction of a boardwalk or bridge in the "bowl" area. Construction of timber steps as part of the hiker-only segment of the Coastal Trail would also require a temporary re-route. Temporary fencing and signage would discourage access through restoration areas. Public use of the site will be redirected to specific marked and designated areas for the purposes of trail and habitat restoration. The NPS would work to educate the community on the rationale behind trail closures, and encourage frequent visitors to use new access routes.

Stewardship Actions with the goal of restoring habitat areas may result in long-term indirect impacts such as limiting access to specific sites determined critical for endangered species recovery. The designation of certain trails as hiker-only may result in adverse impacts to the recreational experiences of other user groups including bikers and equestrians. However, alternative loop routes accessing the same destination points would be available to all user groups. Adverse impacts are expected to be local and minor. Site Stewardship work would occur one Saturday per month; no heavy machinery would be used during this work. Adverse impacts are expected to be short-term, local and minor but will be offset after implementation of mitigation.

Mitigation Measure: Construction will be limited and restricted between the hours of 8:00 p.m. until 7:00 a.m., would not occur on weekends, and established trails will be rerouted during construction.

The preferred alternative would result in many long-term beneficial impacts. Trail conditions would significantly improve with regular maintenance; proposed restoration actions would modify rates of erosion that have contributed to rutting and other hazards. The plan retains some existing trails and eliminates those that are redundant or that have an adverse effect on overriding resource values, such as unstable slopes or endangered species habitat. Trails determined to cause erosion or adversely impact endangered species habitat would be closed. The plan creates trailheads at existing entry points near the subdivision and the Moose Lodge, and ensures access to popular destination points, including along the coast and to the point, the Coastal Trail to the north, and east-west connectors near the “bowl.” The Preferred Alternative includes two alignments for the Coastal Trail that provides two different experiences for users – both hiker-only and multiple-use. Under this use designation, segments of the Mori Point trail system would reflect the interest expressed by the public for diverse recreational experiences, including hiker-only trails. Trail use designations are intended to provide a balanced experience for hikers, bicyclists, equestrians and users of all ages and to reduce the potential for conflicts. The designations also aim to work within the context of the natural topography and sensitive habitat resources on the site. Long-term actions would also result in net indirect benefit to visitors due to improvements in native habitat species diversity. Visitors would enjoy well-maintained, marked and signed trails which would result in increased overall public awareness and support for conservation. Public safety would be improved by the prohibition of off-road vehicles and other unauthorized uses. Beneficial impacts are expected to be local and major.

Cumulative Impacts

This project, in addition to the resource enhancement activities approved by the USFWS in 2005 (for pond building, site stewardship and public outreach, and mosquito control) and the implementation of the City of San Francisco’s Significant Natural Resource Management Plan for the Sharp Park Golf Course and the Laguna Salada Resource Enhancement Plan would have a beneficial cumulative impact on visitor resources. The project ensures safe and enjoyable access to a trail system, including the CCT, along the coast. Aesthetic improvements that accompany these plans would benefit the visitor experience and provide opportunities for conservation education.

Conclusion

Potential adverse impacts to recreation would be local, short and long-term, minor, direct and indirect, and reduced to less-than significant levels. The Preferred Alternative would result in local, long-term, major, direct and indirect beneficial impacts to recreation.

3.10.2.2 Alternative 2

All of the proposed actions under Alternative 1 would also be conducted under Alternative 2. Alternative 2 differs from Alternative 1 in that in Alternative 2, additional trails are designated as hiker-only. Therefore, short-term impacts to visitor resources from trail construction and restoration are not anticipated to differ from those described under Alternative 1. However, the designation of additional trails (1.1 miles) as hiker-only may result in adverse impacts to the recreational experiences of other user groups including bikers and equestrians. Under this trail-

use designation, Mori Point Road and the California Coastal Trail would allow multiple-users to reach main destination points, which include the ocean and the vista from near Mori Peak.

Adverse impacts are expected to be local and minor.

Under this use designation, segments of the Mori Point trail system would reflect the interest expressed by the public for diverse recreational experiences, including hiker-only trails. Trail use designations are intended to provide a balanced experience for hikers, bicyclists, equestrians and users of all ages and to reduce the potential for conflicts. Beneficial impacts are expected to be local and major.

Conclusion

Potential adverse impacts to recreation would be local, short and long-term, moderate, direct and indirect, and reduced to less-than significant levels. Alternative 2 would result in local, short and long-term, major, direct and indirect beneficial impacts to recreation. Cumulative impacts would be as described under the Preferred Alternative.

3.10.2.3 Alternative 3

All of the proposed actions under Alternative 1 would also be conducted under Alternative 3. Alternative 3 differs from Alternative 1 in that in Alternative 3, all trails are designated as multiple-use. Therefore, short-term impacts to visitor resources from trail construction and restoration are not anticipated to differ from those described under Alternative 1. However, the designation of all trails as multiple-use may result in adverse impacts to visitors who expressed the desire for hiker-only trails. Opening all trails to all users also has the potential to create conflict among different users of the same trail. Under this trail-use designation, all users would have access to the same destination points via the same trails. Adverse impacts are expected to be local and minor.

Under this use designation, the entire Mori Point trail system would reflect the interest expressed by the public for diverse recreational experiences. Beneficial impacts are expected to be local and major.

Conclusion

Potential adverse impacts to recreation would be local, short-term, minor, direct and indirect, and reduced to less-than significant levels. Alternative 3 would result in local, short and long-term, major, direct and indirect beneficial impacts to recreation. Cumulative impacts would be as described under the Preferred Alternative.

3.10.2.4 Alternative 4 (No Action Alternative)

Under the No Action Alternative, no improvements to the trail system would occur, therefore no adverse impacts from project implementation would occur. However, the problems currently hindering recreational use, such as unregulated use, unmaintained trails, unstable slopes, deep ruts, and impassible sections during wet seasons, as well as degraded visual landscape would continue and would not be remedied. No action to correct these problems would constitute adverse impacts to recreation and visitor use at Mori Point. If the project were not implemented,

preexisting conditions are expected to continue to have local and major adverse impacts.

Cumulative Impacts

No cumulative impacts are anticipated with the No Action Alternative.

Conclusion

Alternative 4 would result in local, short and long-term, major, direct, adverse impacts. Alternative 4 would not result in beneficial impacts to recreational use.

3.11 Noise

3.11.1 Affected Environment

The Mori Point property is located on the Pacific Coast and adjacent to a suburban subdivision, public golf course, and public beach. The noise environment of the coastal area is influenced by human activity: noise levels are higher near heavily traveled roads and are sporadic near open space and parkland. On the whole, the low density of development and use makes the area relatively quiet. Within the project site, noise would be limited to that generated by the ocean surf, recreational users, occasional aircraft over flights or adjacent homeowners. The natural soundscape, the ocean surf, is viewed as a resource, as having value for its presence, and as a value to be appreciated by visitors.

Both the amount of noise and the length of time you are exposed to the noise determine its ability to damage your hearing. Noise levels are measured in decibels (dB). The higher the decibel level, the louder the noise. Certain types of land uses are considered to be more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure time and intensity) and the types of activities typically involved with these land uses. Noise-sensitive receptors usually include residences, schools, libraries, churches, hospitals, nursing homes, parks, and outdoor recreation areas.

3.11.2 Environmental Consequences

3.11.2.1 Alternative 1

The preferred alternative does not propose installation or operation of new stationary noise sources. The alternative would not locate sensitive noise receptors close to an existing significant noise source. However, construction activities associated with the restoration and trail work could result in short-term, direct, and minor increases to noise levels to neighboring residents and public visiting Mori Point. Construction noise levels would fluctuate depending on the particular type, number, and duration of use of various types of construction equipment. This noise could result from the use of excavators, bobcats, and posthole drillers. From a distance of 50 feet, these noise levels would sound slightly louder than common everyday noises (Table 11). Long-term impacts to ambient noise levels are not anticipated.

TABLE 11. TYPICAL NOISE LEVELS

Typical Noise Sources at a Given Distance from Noise Source (at a distance a person would typically be from the source)		Typical Construction Equipment Noise Levels at 50 feet	
Noise	dBA	Noise	dBA
Rock Music Day	110-150	Jack hammers	130
Leaf blower, lawnmower	90-105	Chain saw	100
Ambulance siren	100	Front Loaders/excavators	80-90
Air Compressor	90	Scrapers/Pavers	89
Hair Dryer	80-95	Bulldozers	85
Vacuum cleaner	84-89	Generators	81
Light Traffic	50	Backhoes	80-85
Threshold of Hearing	10	Pumps	76

Acoustical Engineers and U.S. Environmental Protection Agency, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, December 1971, Noise Pollution Clearinghouse (www.nonoise.org)

To mitigate potential impacts due to noise, the following will be employed:

Mitigation Measures:

- Use of powered construction equipment will comply with the City of Pacifica Municipal Code, Sec. 5-10.03. Enumerated, which prohibits construction noise at night from 8:00 p.m. until 7:00 a.m. Neighbors would also be given notice prior to any construction activities.
- Construction vehicles and equipment will not idle when not in use.
- Noise generated by the construction equipment will be reduced by proper muffling of machinery.

Restricting access to recreational use of motorized vehicles would result in a long-term, indirect, beneficial impacts due to a reduction of noise levels to neighboring residents and public visiting Mori Point. Beneficial impacts are expected to be local and minor.

Cumulative Impacts

Noise is a localized issue limited to the geographic area adjacent to or in the vicinity of a project or activity. Noise can be short-term, during construction, or ongoing, as with noise from a highway. Short-term cumulative impacts could occur if concurrent construction was to occur adjacent to the project area, but these impacts would not be collectively significant

Conclusion

With the mitigation measures described above, adverse impacts to the soundscape would be local, short-term, minor, direct, and reduced to less-than significant levels. Alternative 1 would result in local, long-term, moderate, indirect beneficial impacts to the soundscape.

3.11.2.2 *Alternative 2*

All of the proposed actions under Alternative 1 would also be conducted under Alternative 2. Therefore, impacts due to noise are not anticipated to differ from those described under Alternative 1.

Conclusion

Differences in impacts to noise between Alternative 2 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 2. Cumulative impacts would be as described under the Preferred Alternative.

3.11.2.3 *Alternative 3*

All of the proposed actions under Alternative 1 would also be conducted under Alternative 3. Therefore, impacts due to noise are not anticipated to differ from those described under Alternative 1.

Conclusion

Differences in impacts to noise quality between Alternative 3 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 3. Cumulative impacts would be as described under the Preferred Alternative.

3.11.2.4 *Alternative 4 (No Action Alternative)*

Under the No Action Alternative, restoration and trail modifications would not be implemented. Therefore, no construction-related noise impacts would occur. However, without the implementation of a trail plan, occasional off-road vehicles may use the site for recreation, resulting in adverse impacts to the soundscape.

Cumulative Impacts

There would be no cumulative impacts as a result of the No Action Alternative.

Conclusion

Under the No action alternative, no construction-related adverse impacts to the soundscape would occur. However, occasional short-term, local, direct adverse effects may result from off-road vehicle use. Alternative 4 would result in no beneficial impacts to the soundscape.

3.12 Visual Resources

3.12.1 Affected Environment

Mori Point is located on the Pacific Coast on a promontory above the City of Pacifica with sweeping views from Point Reyes to the Pedro Point Headlands. It sits between Sharp Park beach, Sharp Park golf course and Laguna Salada wetland to the north and private currently undeveloped land to the south. In spring, the point blooms with a brilliant display of

wildflowers. The majority of the site is comprised of a patchwork of coastal scrub vegetation and grasses intersected by a random assortment of unmaintained paths that crisscross the site. These paths contribute to erosion site-wide, resulting in a visually scarred and damaged landscape.



The point covered in wildflowers



Denuded landscape with concrete pad

No structures are located on the property except for a concrete pad with I-beams and three-sided concrete structure on the south side of the site, and a concrete pad on the northwest side of the site. The site contains significant garbage and debris generated from past uses on the site and illegal dumping.

3.12.2 Environmental Consequences

3.12.2.1 *Alternative 1*

Construction due to restoration and trail improvements would result in short-term, local, minor adverse impacts to visual resources. Crews would be working onsite with excavators, bobcats, and posthole drillers and temporary construction fences, detour signs, and other construction equipment would be imposed on the viewshed. Development of the new trail alignments would occur gradually in phases, so construction-related impacts would be localized to specific areas around Mori Point. Impacts would be minor to moderate.

The project will have numerous beneficial impacts to visual resources. The replacement of the haphazard network of social trails throughout Mori Point with carefully planned and designed hiker and multiple-use trail corridors would improve resource conditions and enhance views within the site. Trail conditions would significantly improve with regular maintenance. Proposed restoration actions would reduce rutting and damage to the landscape, native vegetation will be planted, and garbage and debris will be removed from the site. Removal and revegetation of the majority of undesignated trails would have a beneficial effect on the visual quality in the park as the areas will be returned to a natural state. The decrease in the linear miles of these trails would constitute an improvement and beneficial impact to visual resources at the site. Approximately 3.1 miles of trail that will be converted to habitat, reducing the amount

of human disturbance in the viewshed.

Many of the existing trails and roads that will be retained will be converted to appropriately smaller-sized trails, which do not detract from the natural setting. Trail widths will vary but generally multiple-use trail will be 6-8 feet in width and hiker only trails will be 3-5 feet in width. In addition, the new trails would be designed and constructed to visually blend with the existing surroundings to the maximum extent feasible.

Access to views of and from the coast will not be adversely impacted. Non-native invasive trees may be removed, which would open up the view of the beach and ocean. The removal of trees would constitute noticeable visual change, but would not alter the value of Mori Point as a scenic resource or substantially alter the visual character of the site.

The trail alignments selected offer a range of visual experiences. Visitors will continue to have access to popular view points from Mori Point: the Bluff Trail will remain open along the coast and a spur trail to the point will provide spectacular views of the Pacific Ocean, and coastal landmarks to the north such as Mt. Tamalpais and the Marin Headlands, Pedro Point to the south, and Sweeney and Milagra Ridges to the east. In addition, the point is blanketed with colorful wildflowers in the spring.

Fences may be installed in order to protect sensitive habitat, and site improvements such as benches, trashcans, signs, and kiosks may be installed. These items will comply with the GGNRA Parkwide Site Furnishings Guidelines and will be located in a manner that does not interfere with the important viewsheds at the site.

Cumulative Impacts

Cumulative projects that would have a net local, long-term, beneficial cumulative effect on visual resources include those that would improve the general health of ecosystems visible from or within Mori Point, including ongoing NPS and GGNPC Site Stewardship activities, pond building, and the implementation of the City of San Francisco's Significant Natural Resource Management Plan for the Sharp Park Golf Course and the Laguna Salada Resource Enhancement Plan. The Site Stewardship program would restore native plant communities at the site in an attempt to restore historic viewsheds. Actions in the City of San Francisco's Significant Natural Resource Management Plan would protect and enhance natural resources and increase the quality of wetlands in the area. Short-term construction related activities associated with these projects could temporarily affect visual resources. However, these impacts would be incremental, localized, and not collectively significant.

Conclusion

Alternative 1 will result in short-term, local, minor adverse impacts to visual resources due to construction at the site but these potential adverse impacts would be less-than significant. This alternative will also result in many long-term, local, direct, moderate to major beneficial impacts to visual resources at Mori Point. The project will also have long-term regional beneficial impacts, as the view of Mori Point from surrounding lands and/or from adjacent communities would be improved.

3.12.2.2 *Alternative 2*

The majority of actions under Alternative 1 would also be conducted under Alternative 2. However, in this alternative, only the CCT would be designated multiple-use, and all other alignments would be considered hiker only. Since this alternative would have the fewest multiple-use trails, which have a wider cross section, the trails would have less adverse impact on visual resources compared to the other action alternatives. However, regardless of size, most trails in the new trail system would be substantially reduced from the existing condition, resulting in major beneficial impacts to visual resources. Cumulative impacts would be as described under Alternative 1.

Conclusion

Differences in impacts to visual resources between Alternative 3 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 3. Cumulative impacts would be as described under the Preferred Alternative.

3.12.2.3 *Alternative 3*

Under this alternative, trails would be designed to accommodate multiple-use, including a possible increase in width. These trails would expand the area of visible presence of improvements at the site. However, regardless of size, most trails in the new trail system would be substantially reduced from the existing condition, resulting in major beneficial impacts to visual resources.

Conclusion

Differences in impacts to visual resources between Alternative 3 and the Preferred Alternative are negligible therefore the conclusions drawn for the Preferred Alternative also apply to Alternative 3. Cumulative impacts would be as described under the Preferred Alternative.

3.12.2.4 *Alternative 4 (No Action Alternative)*

Under the No Action Alternative, the current trail alignments would remain in their present condition and restoration outside of ongoing NPS and GGNPC Site Stewardship activities, would not occur. The proliferation of unofficial and unmaintained trails would continue to have adverse effects on visual resources. While these unofficial trails provide access to scenic vistas, as landscape features they appear as a haphazard network of compacted dirt pathways that detract from the otherwise scenic surroundings.

Cumulative Impacts

No cumulative impacts are anticipated with the No Action Alternative.

Conclusion

The No Action alternative would result in long-term, local and regional, major, direct adverse impacts to visual resources. No beneficial impacts would occur.

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CHAPTER 4. CONSULTATION AND COORDINATION

4.1 Scoping

4.1.1 Public Involvement

Prior to the preparation of the EA, through direct mailing and follow-up presentations, the NPS solicited input from the public on the proposed project (Appendix H) and their views on any environmental impact in connection with this project. The following methods were used to notify the public of the Mori Point Restoration and Trail Plan and solicit input:

- Mailings to more than 1,500 individuals, agencies, and organizations
 - Regulatory and public agencies
 - Fairway West and nearby residents
 - GGNPC's Site Stewardship Program mailing list
 - GGNRA mailing list
- On-site bulletin board and flyers
- Newspaper Press releases (Cities of San Francisco, San Jose, San Mateo, Pacifica)
- Open House – October 25, 2005
- Site Walk – October 29, 2005

Seventeen people signed the registrar for the public meetings, though approximately 30 individuals attended. Fourteen people attended the public field trip. Thirty-seven individuals provided a total of 134 comments. Comments were submitted in writing at public meetings and via email, mail, and through the PEPC website. The planning team considered each comment.

Most of the comments submitted fall into one of the following categories listed below:

Trail Use: There was a wide range of comments with regards to trail use, with a number of individuals suggesting multiple-use and several advocating for single-track sections for specific uses. Each comment was considered within the context of all site elements: site topography and erosion, endangered species, visitor access and use. The Preferred Alternative represents the best combination of views expressed by the public with respect to use designation.

Trail Design: Individuals provided a number of preferences for trail design including post and cable fencing, narrow trails, increased signage and the desire to minimize asphalt. Suggestions will be taken into consideration by those designing the various trail segments.

Trail Alignment: In terms of trail alignment, most of the comments were suggestions of specific segments and loops to be added, deleted or maintained. Each comment was considered, and the Preferred Alternative reflects the integration of comments and suggestions that were consistent with the overall goals of the environmental assessment.

Dogs: Public comment on dogs reflected those in favor of both on and off leash activities. Dog walking, however, is not covered in the EA because it is being determined in a federally sanctioned on-going Negotiated Rulemaking process. Comments also covered areas such as dog clean up and the desire for more trash cans and baggy stations.

Wildlife and Vegetation: Most of the suggestions made for both wildlife and vegetation were consistent with management objectives, and supported the goal of improving habitat for the endangered species on site. Mosquitoes are dealt with in a separate section in this E.A. Suggestions made for wildlife and vegetation management were incorporated into the plan where appropriate.

4.1.1 Internal Scoping and Project Review

Internal scoping was conducted by the staff of the GGNRA. Resource specialists were contacted to determine what types of impacts the project might have. On August 27, 2003 and July 27, 2005, the Proposed Action was evaluated under the GGNRA's Project Review process. This interdisciplinary process reviewed and defined the purpose and need, identified potential actions to address the need, determined issues and impact topics to be addressed, and confirmed that the project would require an EA to determine whether the impact of the proposed action or No Action Alternative would be significant.

4.2 Regulatory Compliance

Compliance with major federal laws and associated state regulations is summarized below.

National Environmental Policy Act (NEPA) of 1970. PL 91-190, 83 Stat. 852, 42 USC §4341 et seq.

This EA provides disclosure of the planning and potential environmental consequences of the proposed action and No Action Alternative, as required by NEPA. The EA will be made available for public review and comment for 30 days. Agency and public comments will then be considered and a determination will be made whether to further assess alternatives and impacts or to prepare a Finding of No Significant Impact (FONSI), which will respond individually or through summaries to all substantive comments.

U.S. Army Corps of Engineers

Pursuant to Section 404 of the Clean Water Act (33U.S.C. 1344), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material to Waters of the U.S., including wetlands. On February 7, 2006, GGNRA sent the USACE the wetland delineation to determine if there are any jurisdictional wetlands that may be affected by proposed project activities resulting in the "fill" of Waters of the U.S. Consultation is underway and any necessary permits will be acquired before completion of the NEPA process.

San Francisco Bay Regional Water Quality Control Board

The Federal Clean Water Act, in Section 401, specifies that states must certify that any activity subject to a permit issued by a federal agency, such as the USACE, meets all state water quality standards. In California, the Regional Water Quality Control Board (RWQCB) is responsible for taking certification actions for activities subject to any permit issued by the USACE pursuant to Section 404. A Section 401 certification may be needed from the RWQCB for potential impacts to Waters of the State from proposed project activities.

U.S. Fish and Wildlife Service

Under Section 7 of the federal Endangered Species Act as amended, PL 93-205, 87 Stat. 884, 16 USC §1531 et seq., federal agencies are required to consult with the USFWS if their actions, including permit approvals, could adversely affect an endangered or threatened species, or its critical habitat. Section 7 consultation would result in the issuance of a Biological Opinion. The USFWS may issue an incidental take statement in the biological opinion allowing take of a species that is incidental to another authorized activity, provided the action will not jeopardize the continued existence of the species.

This Environmental Assessment is intended to also serve as a Biological Assessment to initiate formal Section 7 interagency consultation between NPS and USFWS. The GGNRA has already initiated informal consultation with USFWS by conducting meetings to discuss the project on September 13, 2005 and September 28, 2005, and through ongoing and regular correspondence between USFWS staff and GGNRA Natural Resource staff.

California Coastal Commission

GGNRA sent a letter to the California Coastal Commission on December 19, 2005 asking for a Negative Declaration for the project under the California Environmental Quality Act (CEQA). Consultation is currently underway.

California Department of Fish and Game

Since the project area lies entirely within federal property, the project is not regulated by the California Department of Fish and Game (CDFG). However, in an effort to work collaboratively with regulatory agencies so as to be as protective as possible to California endangered species, the GGNRA contacted CDFG for input on the project.

Advisory Council on Historic Preservation and California State Historic Preservation Officer

The National Historic Preservation Act of 1966, as amended PL 89-665, 80 Stat. 915, 16 USC §470 et seq. and 36 CFR 18, 60, 61, 63, 68, 79, 800, requires federal agencies to consult with the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO) regarding undertakings that may affect properties listed in or eligible for listing in the National Register of Historic Places. In 1992, Golden Gate National Recreation Area entered into a Programmatic Agreement with the ACHP and the SHPO which allows park staff from the Division of Cultural Resources to review undertakings for National Historic Preservation Act conformance as long as such undertakings are found to have No Effect or No Adverse Effect on properties listed in or eligible for listing in the National Register of Historic Places. The park reports to the ACHP and the SHPO on such reviews annually. During the Mori Point planning phase, park cultural resources staff surveyed Mori Point for the presence of properties eligible for the National Register of Historic Places and found none. As a result, it has been determined that the actions called for in this plan will have no effect on National Register properties, and the plan will be reviewed under the Golden Gate National Recreation Area Programmatic Agreement for National Historic Preservation Act conformance. A report of the cultural resources survey will be sent to the SHPO along with this EA.

Executive Order No. 11990, Protection of Wetlands and Director's Order 77-1, Wetland Protection

In accordance with Executive Order 11990, Director's Order 77-1 provides guidance for the NPS in the protection wetlands. Wetlands at the project site fall within the Cowardin classification system, some of which may be considered jurisdictional wetlands according to the USACE. Regardless of classification, the NPS must complete a "Statement of Findings" that describes and provides rationale for adverse impacts to wetlands. However, the proposed project is identified as an action that is excepted from preparation of a Statement of Findings, according to DO-77-1, Wetland Protection, Procedural Manual, Section 4.2.A.1.a, "...foot/bike trails or boardwalk, including signs, the primary purpose of which are public education, interpretation, or enjoyment of wetland resources." and Section 4.2.A.1.e, "Actions designed specifically for the purpose of restoring degraded (or completely lost) natural wetland, stream, riparian, or other aquatic habitats or ecological processes..." DO 77-1 presents a set of Best Management Practices (BMPs) that must be satisfied for a proposed action to qualify for the exception to the Statement of Findings. All of the BMPs identified in the Director's Order will be implemented during the project. The list of BMPs has been incorporated into the project and is included in Appendix E.

The NPS is also mandated to a) avoid adverse wetland impacts to the extent practicable, b) minimize impacts that could not be avoided, and c) compensate for remaining unavoidable adverse wetland impacts via restoration of degraded wetlands. The NPS adopts a goal of "no net loss of wetlands" and strives to achieve a longer-term goal of net gain of wetlands. As described in the EA, this project will restore wetland habitat and increase habitat by constructing 0.4 acres of new pond habitat, resulting in a net increase of wetlands at a 5 to 1 ratio of created to permanently impacted wetlands.

4.3 List of Preparers and Contributors

Preparers

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Steve Ortega, Environmental Protection Specialist
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Consultants

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Barth Campbell, Campbell Grading

4.4 List of Recipients and Review of EA

The following is a list of agencies and organizations that will have received a notice of availability or a copy of the environmental assessment. In addition, 441 private individuals will have received a notice of availability. A complete list of names on the NPS mailing list for this project is in the project file and is available from the issuing office. Additionally, notice of the project and EA was sent to all individuals that indicated interest in GGNRA planning and management activities (approximately 1,100) as part of the notice for the GGNRA Park Public Meeting on Tuesday, February 28, at 7 p.m. The project will be presented at this meeting which will be held at the GGNRA Park Headquarters, Fort Mason, San Francisco. The EA will be available at the meeting.

Federal Agencies

Environmental Protection Agency

Federal Emergency Management Agency

Fish and Wildlife Service

Gulf of the Farallones National Marine Sanctuary

National Marine Fisheries Service

Natural Resources Conservation Service

U.S. Army Corps of Engineers

U.S. Department of Transportation

Elected Officials

U.S. Senator Barbara Boxer

U.S. Senator Dianne Feinstein

Congressperson Nancy Pelosi, District 8

Congressperson Tom Lantos, District 12

Congressperson Anna Eshoo, District 14

California State Senator Jackie Speier, District 8

California State Assembly Member Leland Yee, Ph.D., District 12

California State Assembly Member Mark Leno, District 13

California State Assembly Member Gene Mullin, District 19

San Mateo County Board of Supervisors, Attn: Rich Gordon

San Francisco County Board of Supervisors, Attn: Aaron Peskin

Mayor Gavin Newsom, City and County of San Francisco Office of the Mayor

Mayor Sue Digre, City of Pacifica, Office of the Mayor
City of Pacifica City Council, Attn: James Vreeland

State Agencies

California Coastal Commission
California Coastal Conservancy
California Department of Fish and Game
California Department of Forestry
California Department of Parks and Recreation
California Department of Transportation
California Department of Water Resources
California Native American Heritage Commission
California Office of Planning and Resources State Clearinghouse
California Resources Agency
California Water Resources Control Board
State Historic Preservation Office

Regional, County, and Municipal Agencies

Association of Bay Area Governments
Bay Area Air Quality Management District
Bay Conservation and Development Commission
City of Pacifica Planning Department
San Francisco Bay Regional Water Quality Control Board
San Francisco Planning Department
San Francisco Public Utilities Commission
San Francisco Water Department
San Mateo County Agricultural Commission
San Mateo County Congestion Management and Transportation Planning
San Mateo County Environmental Services Agency
San Mateo County Local Agency Formation Commission (LAFCO)
San Mateo County Parks and Recreation
San Mateo County Planning and Building Division
San Mateo County Public Works
San Mateo County Resource Conservation District

Organizations

Bay Area Paragliding Association
Bay Area Ridge Trail
California Native Plant Society, Yerba Buena Chapter
Coastwalk
Committee for Green Foothills
Earth Share of California
Friends of Sweeney Ridge
Golden Gate Audubon Society
Mid-Peninsula Regional Open Space District
Pacifica GGNRA Liaison Committee

Pacifica Land Trust
Pacifigans for Sustainable Development
Peninsula Open Space Trust
Peninsula Bicycle and Pedestrian Coalition
Responsible Organized Mountain Pedalers (ROMP)
San Francisco Bicycle Coalition
San Francisco Planning and Urban Research Association
San Mateo County Farm Bureau
Sequoia Audubon Society
Sierra Club, Loma Prieta Chapter
Sierra Club, San Francisco Bay Chapter
Silicon Valley Bicycle Coalition
Trust for Public Land
Wilderness Society

Libraries

The following is a list of libraries where the public can access this EA and review the document onsite.

S.F. Civic Center Public Library
100 Larkin Street
San Francisco, CA 94102
(415) 557-4400

Pacifica Library
104 Hilton Way
Pacifica, CA 94044
(650) 355-5196

Millbrae Library
1 Library Avenue
Millbrae, CA 94030
(650) 697-7607

San Mateo Library
1100 Park Place, 4th Floor
San Mateo, CA 94403
(650) 522-7800

There will be a 30-day comment period on the EA. Comments may be submitted online at: <http://parkplanning.nps.gov/goga>, by email to moripointea@parksconservancy.org, or in writing to the following address:

Superintendent, Golden Gate National Recreation Area
ATTN: Mori Point/Division of Planning and Technical Services
Fort Mason, Building 201
San Francisco, CA 94123

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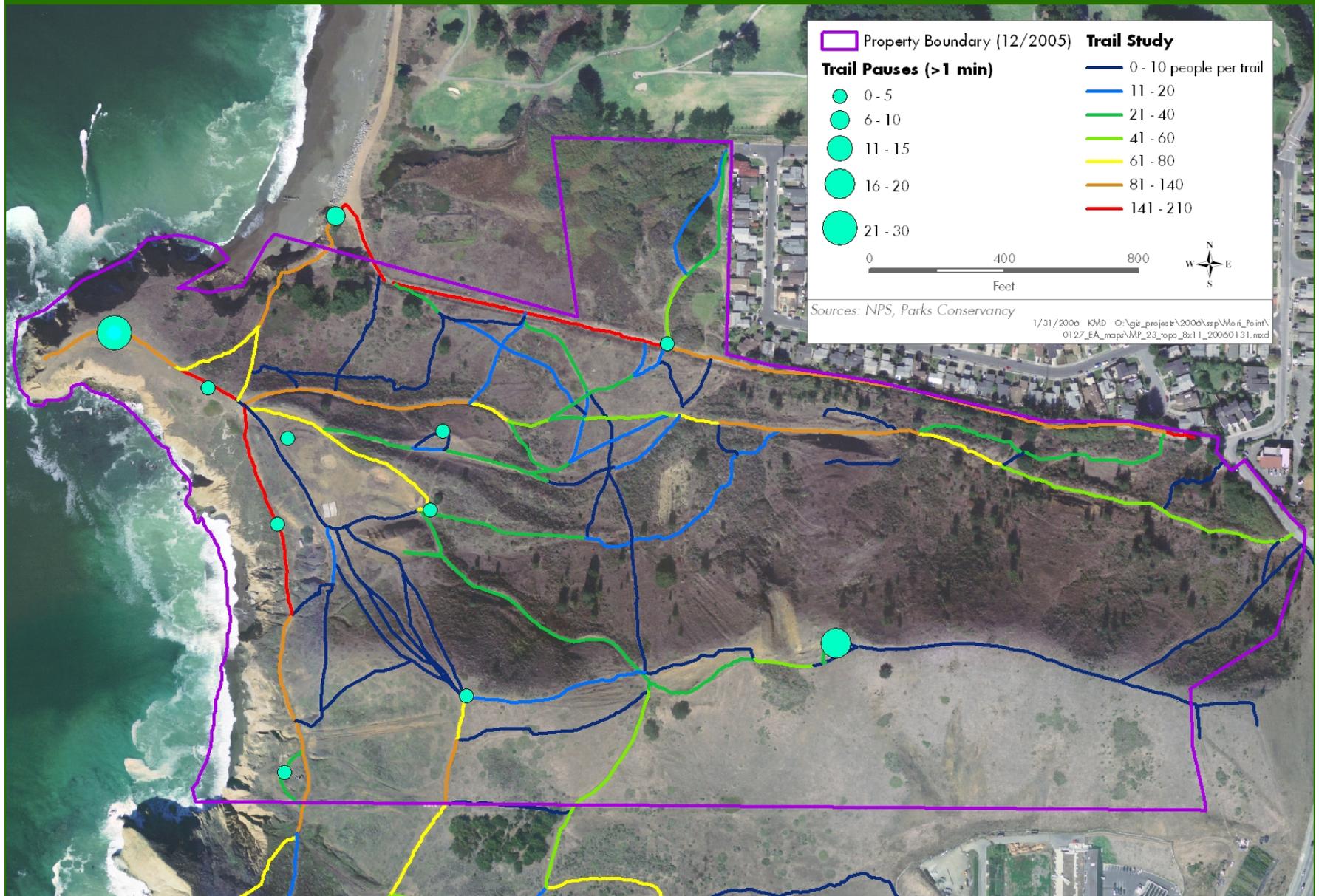
Appendix A. Mori Point Site Resources Studies and Maps

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MORI POINT

Restoration & Trail Plan

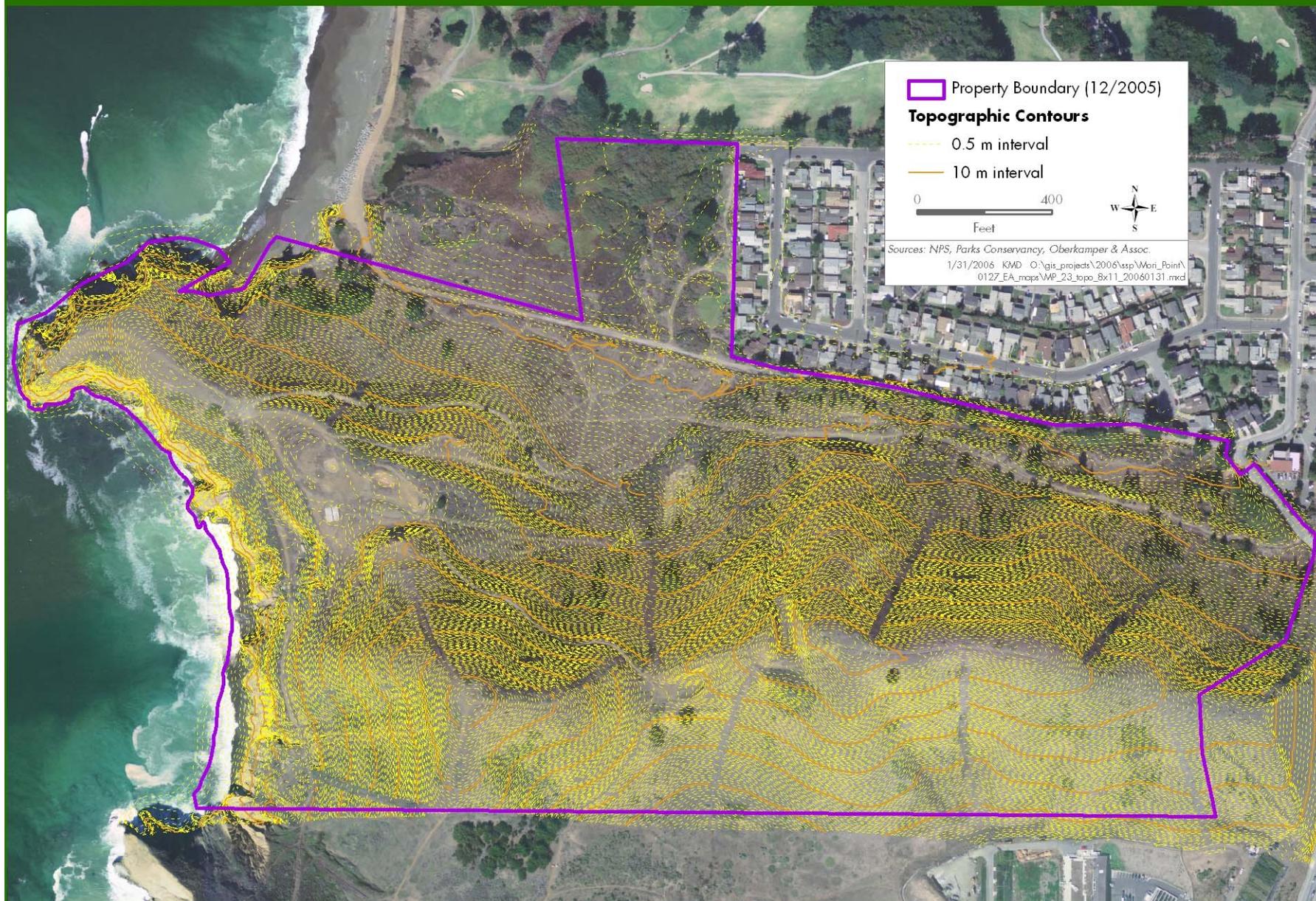
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MORI POINT

Restoration & Trail Plan

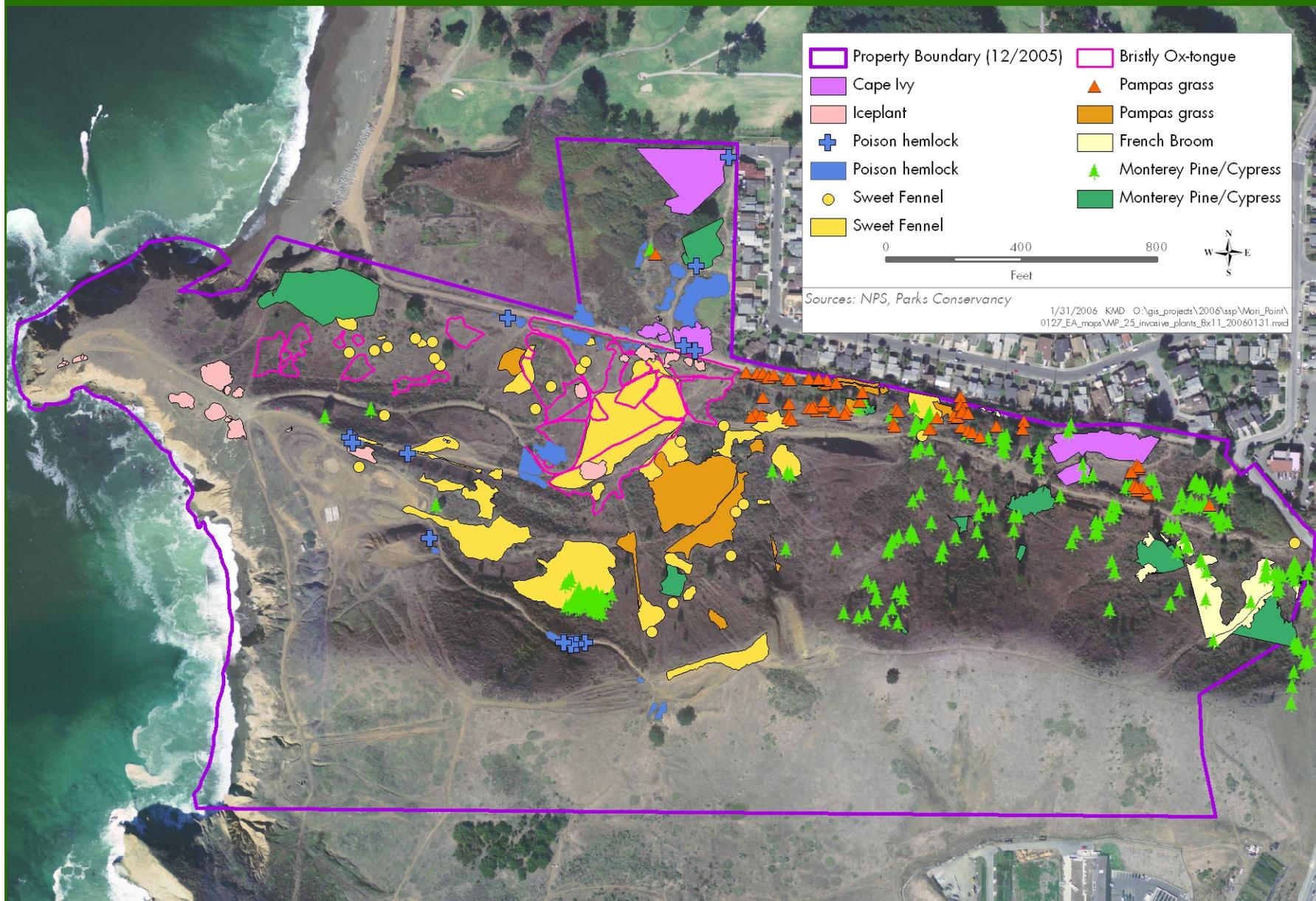
Topographical Contours



MORI POINT

Restoration & Trail Plan

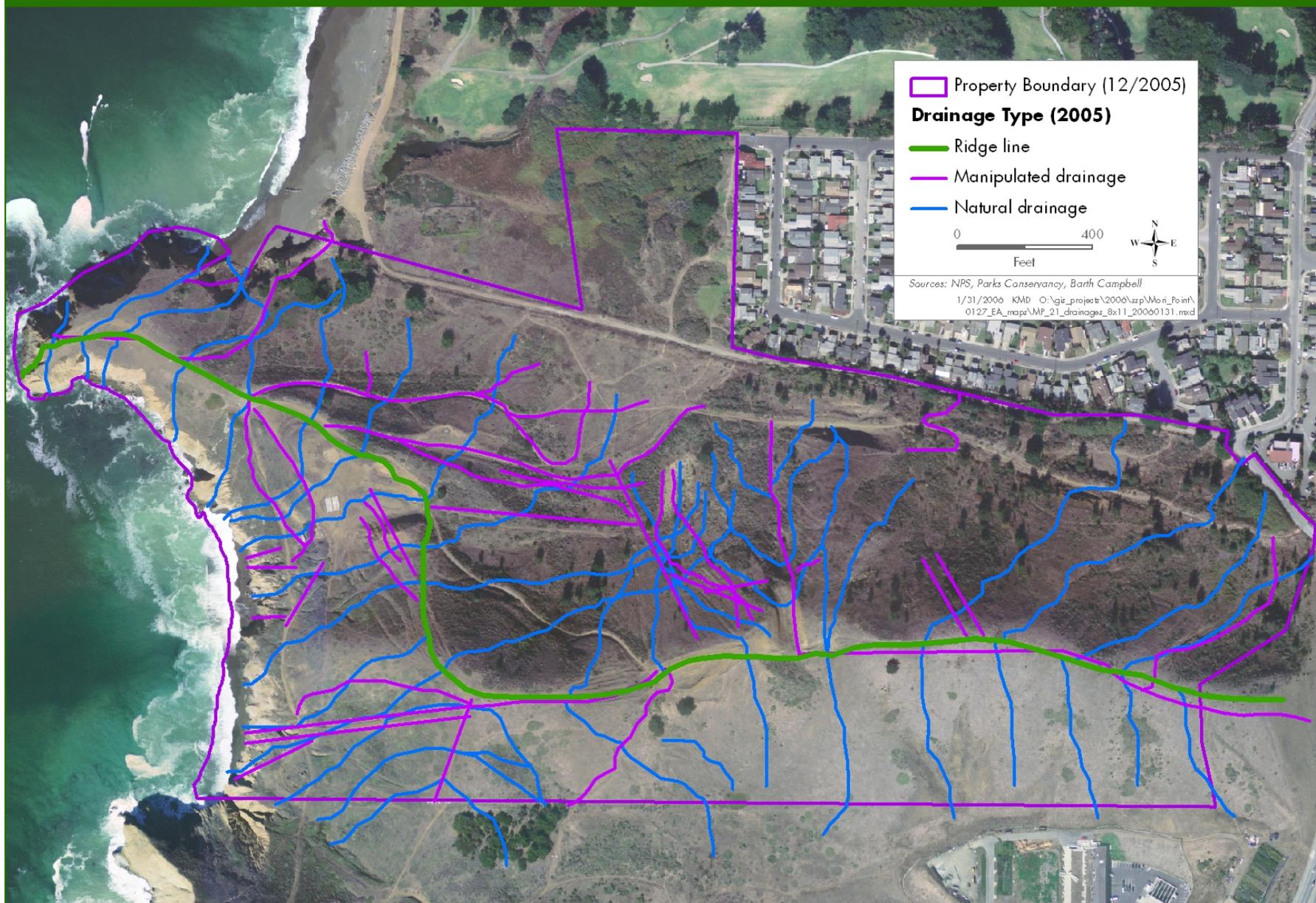
Surveyed Invasive Plants



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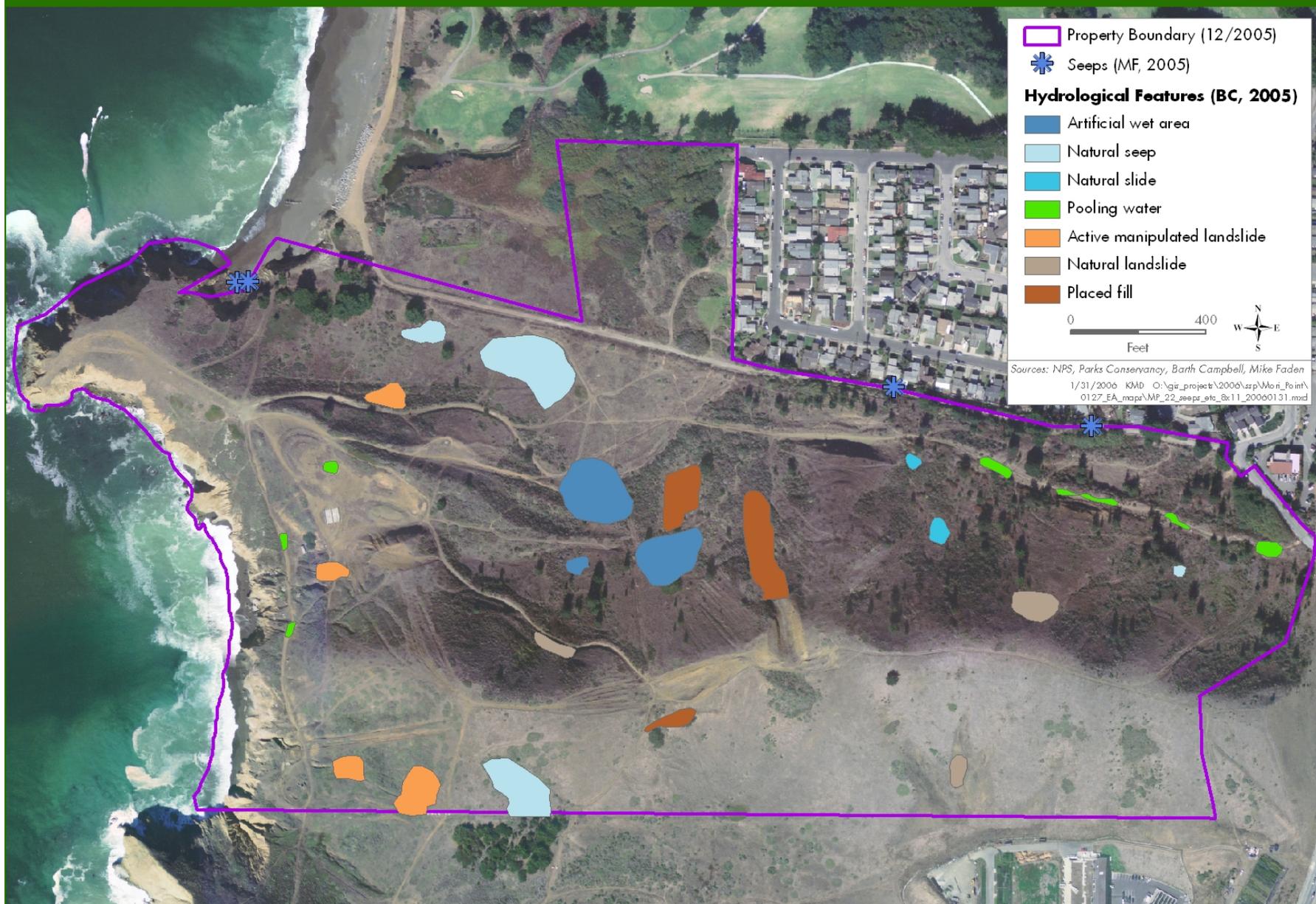
Drainages



MORI POINT

Restoration & Trail Plan

Hydrological Features



Appendix B. Invasive Species Removal Techniques

Manual Control

- Hand pulling: pulling entire plant from ground using hands or weed wrench. This is the most commonly used method for controlling invasive plants in the GGNRA. It is best used for species that are either shallowly rooted or with tap root easily pulled from the ground. This is an excellent technique for volunteers and is minimally invasive. Examples include iceplant (*Carpobrotus edulis*) and French broom (*Genista monspessulana*).
- Cutting: cutting stems using loppers, hand shears, or handsaws. This treatment is commonly used for removing inflorescences to minimize the seed crop of an invasive species or for tree like species that are not known to resprout. This is an excellent technique for volunteers and is minimally invasive, involving no ground disturbance or impacts to non-target species. Examples include removing plumes from large pampas grass (*Cortaderia jubata*) or controlling Monterey pine (*Pinus radiata*) or cypress (*Cupressus macrocarpa*) saplings.
- Grubbing: using hand tools to dig out plants. This treatment is commonly used to dig out plants that cannot be easily hand pulled using a weed wrench or by hand. It entails more ground disturbance than the above treatments and it is more difficult to ensure that the entire root is removed. Examples where grubbing may be successful include pampas grass (*Cortaderia jubata*), purple star thistle (*Centaurea calcitrapa*), tocalote (*Centaurea melitensis*), Italian thistle (*Carduus pycnocephalus*), cape ivy (*Delairea odorata*), and sweet fennel (*Foeniculum vulgare*).

Mechanical Control

- Scorching: apply heat to seedlings with propane torch. Effective for controlling cotyledons and small seedlings of invasive plants, especially in areas with otherwise low vegetative cover. Examples include French broom (*Genista monspessulana*) seedlings.
- Brushcut or Mow: mechanical equivalent of cutting, but faster. Excellent for controlling large patches of plants that respond to cutting or for eliminating inflorescences from mature plants before they set seed. Examples include annual and perennial grasses, other annual or biennial species.

Chemical Control

- Spot / wick application: spray or sponge a dilute amount of NPS approved herbicide to growing foliage. These methods are only employed for plant species or plant stages that cannot be effectively removed by manual or mechanical means because they resprout, because ground disturbance entailed is unacceptable, or because other means of removal would pose a threat to worker safety. Wick application is less commonly used, but has substantially less non-target impact due to its direct application. Further, herbicide can be applied specifically to the upper foliage in order to prevent small mammals, reptiles, and amphibians from coming directly into contact with herbicide. Examples include large plants of sweet fennel (*Foeniculum vulgare*), large patches of pampas grass

(*Cortaderia jubata*), bristly ox-tongue (*Picris echioides*), and plants occurring on steep slopes or in poison oak thickets.

- Cut and treat stump with herbicide: cut stems as above then apply a small amount of NPS approved herbicide to cut stump or stem. This method is employed for certain shrub species at locations where ground disturbance caused by hand pulling or grubbing is unacceptable. It is also used for tree species that resprout after being cut. Examples include Eucalyptus (*Eucalyptus globulus*), Cotoneaster (*Cotoneaster pannosa*), and French broom (*Genista monspessulana*).

Note: All herbicide use would be implemented consistent with the NPS Integrated Pest Management (IPM) Program (<http://www.nature.nps.gov/biology/ipm/>). IPM is a science-based, decision making process that coordinates knowledge of pest biology, the environment and available technology to prevent unacceptable levels of pest damage, by cost-effective means, while posing the least possible risk to people, resources and the environment. The IPM Process reviews all available tools suitable for managing the specific pest species in each situation and selects for use the least toxic and effective method. Pesticides and biological control agents proposed for use on NPS lands must be submitted to the park IPM Coordinator for review by Washington Service Office or Regional IPM Coordinators.

Appendix C. Trail Construction Methods

Close trail and convert to natural habitat

Non-designated trails would be decommissioned by using signage, fencing, and/or, where necessary, mechanical scarification. Scarification will occur to the depth necessary to restore soil conditions consistent with adjacent uncompacted sites using a small trail tractor with a maximum width of four feet. Revegetation would occur as appropriate to rehabilitate the area.

Close road and convert to natural habitat

Prior to deconstruction, seeps or springs would be identified and wet water crossings would be installed for the duration of deconstruction. Roads would be converted to habitat primarily by re-establishing the natural drainage pattern of the landscape. Where feasible, soil from the road's out-sloping side, or imported fill, would be used to recontour the segment to best recreate pre-road topography. Established vegetation would be removed and the former roadbed would be decompacted, then filled and recontoured. Revegetation would occur as needed to rehabilitate area.

Down-grade and convert road to trail

Several of the existing roads at Mori Point were constructed with a drainage system paralleling the road. Over the years, these ditches have filled with sediment and have become non-functional. Water then travels down the roadbed causing gullying and additional sediment build up. Sediment is ultimately delivered to the lower wetland area where it has a negative effect on habitat values. The steps to convert road to trail are similar to road to habitat conversion. Seeps or springs shall be identified prior to deconstruction and wet water crossings will be installed for the duration of deconstruction. The inner road-edge drainage system would be removed to reestablish the natural drainage pattern of the landscape and imported or relocated fill from the outer edge of the road would be used to narrow and recontour the area. Any established vegetation would be removed followed by decompaction of the roadbed. An approximately five-foot wide trail tread on a preferred alignment would be constructed with an out-slope of 2% to 5% to maintain natural drainage patterns. Revegetation would occur as needed to rehabilitate the area and clearly define trail boundaries.

Improve trails

Existing trails would be narrowed using the appropriate trail removal and conversion methods described above. On steeply graded segments, approximately five-foot wide timber steps would be constructed, with a one-foot shoulder on either side, resulting in an approximate 7-foot wide temporary impact area.

Establish new trails

New trails would be constructed so that they are out-sloped from 2 to 5% to allow water to drain from the surface naturally. The CCT multiple-use alignment would be approximately six feet wide where feasible plus a one-foot shoulder on both sides. Other new trails would be approximately five feet wide, plus shoulders. Trail tread would be of a durable, appropriately-colored material. Where trail alignments exceed a grade of 8-12%, construction of timber steps would be considered. Prior to construction, seeps or springs would be identified and wet water crossings will be installed for the duration of construction.

Appendix D. Proposed Pond Locations

Five potential sites for pond creation have been identified, however, locations may change as further detailed study is needed to determine optimal pond location, size, and depth.

Proposed Pond Location 1 is on the western side of the property between the Upper Trail and Mori Road. It was selected for its close proximity to perennially saturated soils and the dense willow canopy located immediately to the north. The primary limiting factor for long-term sustainability of this pond is water supply. There does not appear to be substantial surface water runoff directed to the vicinity of the pond, nor is there shallow groundwater at this site. Thus, successful pond creation at this site will require some regrading of upland slopes in order to direct runoff to this location.

Proposed Pond Location 2 is a large flat expanse below the road quarry along the Upper Trail. This site was identified for its ease of access and for the potential for redirecting water from a nearby drainage into a pond. Currently, runoff from the surrounding hillside is concentrated in a small channel located immediately east of Pond Location 2. The outfall of this drainage is directed through a V-shaped notch in the retaining wall on Mori Road and ultimately to the drainage ditch running along the southern side of Mori Road. It appears that this drainage could easily be rerouted to the west to supply a pond with surface water run off. Ground water would not be a substantial source of water supplied to a pond in this location.

Proposed Pond Location 3 is located near Fairway Trail just north of Mori Road. A pond in this location would receive run off from the roadside ditch as a primary water supply. This would entail redirecting ditch flow through a culvert beneath the road at a location several hundred feet east of the existing culvert crossing. Groundwater levels and water supply from the ditch would need to be identified before pond construction.

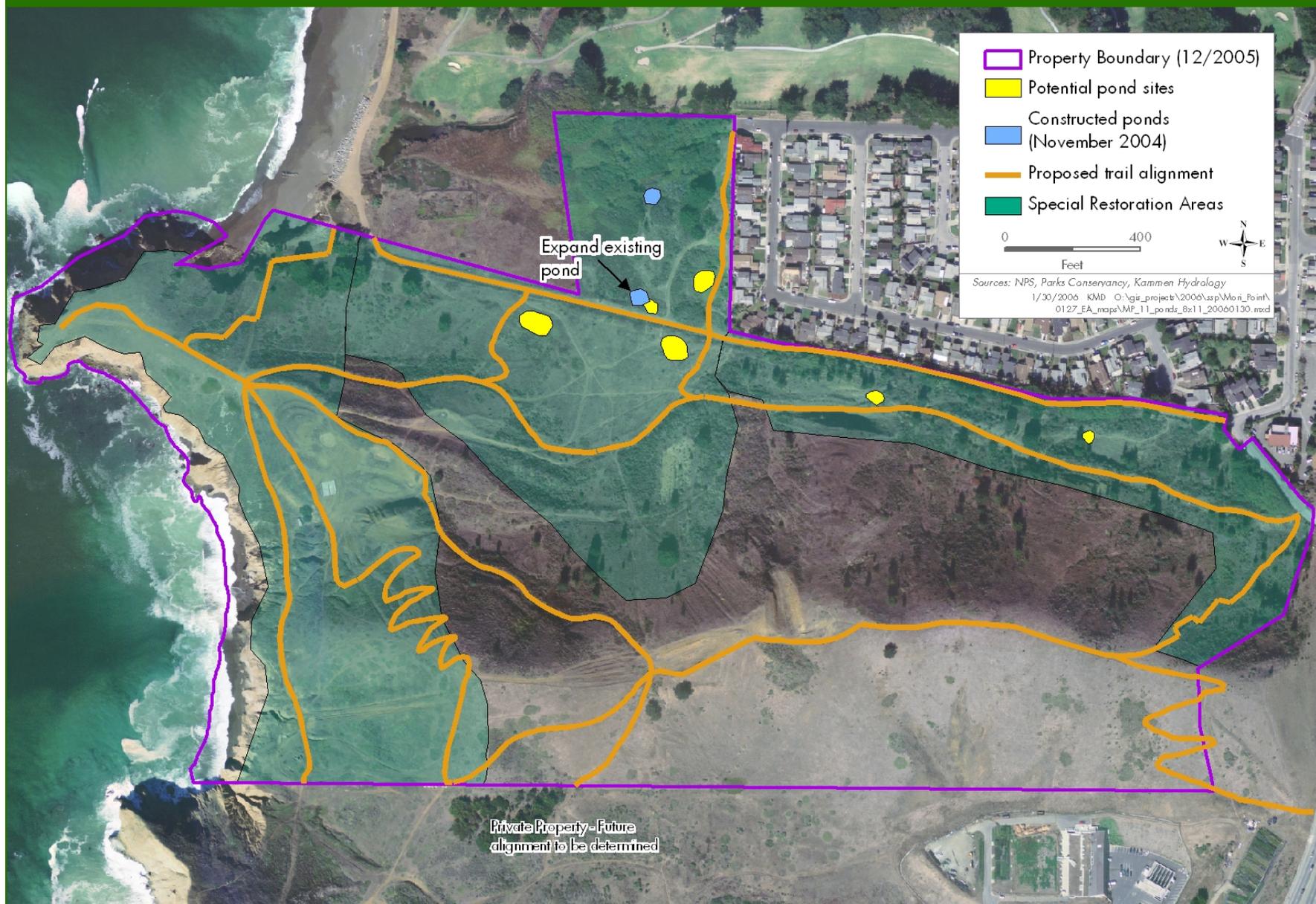
Proposed Pond Location 4 is in a stream depression and water to a pond constructed here would capture runoff concentrated from the upland Bowl area. Pond outflow would be directed to the existing Southern Pond. This would entail removing a substantial portion of the earthen berm, located along the south side of Mori Road, and creating a bridge or elevated causeway road surface. In essence, this work would create a more natural hydrologic connection between the upland Bowl area and the lower freshwater marsh habitat located on the north side of Mori Road. In addition to accommodating a more natural water flow, these changes would enable unrestricted migration of the San Francisco garter snake and other wildlife in the area.

Proposed Pond Location 5 is further west near the CCT Bowl Connector in a known seep area. This pond would rely on groundwater seepage as its primary water source as there are no existing surface water drainage features directing runoff to this location. Prior to design of this pond, monitoring of shallow groundwater conditions and water table variability throughout the year will need to be conducted. A potential benefit of a seep/spring fed pond is substantially lower sediment input and a longer life span.

MORI POINT

Restoration & Trail Plan

Existing & Potential Pond Locations



Appendix E. Best Management Practices and Mitigation Summary

These measures will guide implementation of the project where appropriate and are intended to minimize adverse impacts to sensitive biological resources within the Project Area.

A. Pre-construction Preparation

- 1) The boundaries of construction areas will be clearly flagged and/or signed in advance of construction.
- 2) Trees or shrubs overhanging or encroaching on access roads will be trimmed back to allow vehicles to pass by without going off the road.
- 3) All material stockpiling and staging areas will be located within project right of ways in non sensitive areas, or at designated disturbed/developed areas outside of design construction zones.
- 4) The implementation of project elements will be conducted in incremental phases (as feasible) by region to ensure that disturbance to habitats and species is restricted to small and/or spatially separate portions of the site at any one time. These areas will be defined in coordination with the NPS Aquatic Ecologist.

B. Transportation and Access

- 1) Access to the project area will be restricted to existing access roads and routes identified in the project description. Appropriate turnaround areas will be approved by the Biological Monitor and shall be clearly marked.
- 2) Speed limit signs (10 miles per hour) will be posted on all access roads.
- 3) All entry gates to the construction area will be kept closed during construction and be locked when not in use.
- 4) Vehicle and equipment refueling and lubrication will only be permitted in designated disturbed developed areas where accidental spills can be immediately contained.
- 5) All vehicles will carry a suitable fire extinguisher and other protective and preventative gear as required by NPS.

C. Training

- 1) A qualified Biological Monitor will train all project staff, contractors and consultants prior to the start of construction regarding habitat sensitivity, identification of species of concern, and required practices within the habitat area. A fact sheet or flier containing this information will be prepared and distributed.

D. Monitoring

- 1) The Biological Monitor will inspect each active work area daily immediately before activities begin and continually monitor in advance of the work crew and heavy equipment.
- 2) The Biological Monitor will have the authority to stop activities that are in violation of permit conditions or put listed species in danger.
- 3) A Biological Monitor will inspect underneath any vehicle that is parked for 30 minutes or more immediately prior to moving the vehicle.
- 4) The Biological Monitors will keep a daily log of project activity and compliance with permit conditions.
- 5) NPS or GGNPC staff shall educate the public to report suspicious activity at Mori Point.
- 6) NPS or GGNPC staff shall carry out a protocol for monitoring visitor-associated impacts to

listed species, their host plants and habitats. A report will be submitted to the Service annually (e.g. in the annual report prepared by the stewardship team for the site).

E. *Reporting*

- 1) If the Biological Monitor discovers a reportable incident, they will concurrently notify the construction supervisor and the USFWS immediately following the discovery.
- 2) If a San Francisco garter snake or California red-legged frog is killed or injured by activities associated with this project, project activities in the vicinity will stop immediately, if this can be done safely, and would not resume until the USFWS have provided permission to resume activities.
- 3) Any dead or injured San Francisco garter snakes will be turned over to the USFWS. A written report detailing the date, time, location, and general circumstances under which a dead or injured San Francisco garter snake was found will be submitted to the USFWS no later than three business days following the incident.

F. *Site Restoration*

- 1) All trash, debris, and construction materials generated by construction will be contained within non-sensitive areas and promptly removed from the site.
- 2) A biologist or horticulturist will inspect the site, and determine whether reseeding is needed following construction. In upland habitat, areas of bare soil exposed as a result of project activities will be revegetated with appropriate native species collected on site to restore vegetation similar to pre-existing conditions.
- 3) Prior to any on-site seed collection efforts per year for restoration activities, including broadcast seeding and nursery propagation, the NPS Vegetation Ecologist will be consulted to determine appropriate collection methods and thresholds per native or sensitive plant community, per native species, and per geographic area on-site to ensure that seed collection efforts do not deplete natural seed resources and/or genetic diversity.
- 4) The effectiveness of restoration efforts would be monitored. Photographs will be taken before construction, immediately after construction, and at appropriate periods for the year following construction.

G. *Invasive Non-Native Plant Species Removal and Control*

All invasive non-native plant removal and control activities would be incrementally phased within small areas in order to reduce any potential impact on sensitive species.

1) Manual Control

- Hand pulling:
 - Large woody species- Prior to removal, the site will be surveyed for underground burrows. In those areas where no burrows are found, the plant will be removed by hand or by hand using a weed-wrench tool. Cleared vegetation would be placed in small piles to decompose naturally, unless the vegetation contains viable seeds. In those situations, vegetative material will be disposed of off-site. In cases where underground burrows are present, plants will be cut instead of pulled.
 - Small woody or herbaceous species – Small individuals or species that have a very small root mass, such as purple star thistle, or Italian thistle can be easily pulled by hand and

removed without causing any substantial ground disturbance, and would not require hand excavation of burrows prior to removal. These should be pulled when the soil is moist to facilitate removal and avoid breakage, resulting in roots remaining in the soil and possibly resprouting.

- Cutting:
 - Cutting may occur in cases where hand pulling is inadvisable due to the presence of rodent burrows. Cutting would not cause any soil disturbance and would hence not result in adverse impacts to sensitive species. Cleared vegetation would be placed in small piles to decompose naturally, unless the vegetation contains viable seeds. In those situations, vegetative material will be disposed of off-site.
 - During tree removal activities, trees will be felled into areas of lower quality habitat for San Francisco Garter snake and California red-legged frog whenever possible. A biologist will survey these areas immediately prior to felling or trees to ensure that neither of these species is present in the drop zone. All vehicles associated with tree-removal activities shall be escorted into the work area by the biologist when traveling cross country or when using any unpaved access road. The biologist will clear the access roads and other routes prior to removal of logs by the skidder, but will not escort the vehicle. When skidding logs out of the project areas, this activity will be supervised by the biologist prior to moving logs. All tree removal will be conducted in such a way as to minimize erosion and changes to drain patterns. In most locations, stumps should be cut flush (parallel) with the ground. On steep slopes, stumps should be cut leaving a horizontal surface which should be cross-hatch cut with a saw to facilitate rapid rotting of the stump – this method is less visible than flush-cutting the stump parallel to the slope.
 - All wood chips associated with tree removal will be either 1) broadcast under a closed canopy pine, blackwood acacia, eucalyptus, or cypress forest with no understory (pine needle or leaf substrate) provided that the maximum chip depth is six inches or 2) the chips will be hauled off-site to an approved dump site.
- Grubbing:
 - Prior to any removal, vegetation will be carefully checked and searched for the presence of the San Francisco garter snake. If no snake is found, aboveground vegetation would be progressively cut back from overstory level to ground level to allow frogs to move out of the treatment area. Again, if no San Francisco garter snake is found, the remainder of the plant will be removed using a Pulaski, handpick, or similar digging tool. Cleared vegetation will be placed in small piles to decompose naturally, unless the vegetation contains viable seeds. In those situations vegetative material will be disposed of off site.

2) Mechanical Control

- Scorching (using a flame torch to wilt and kill young vegetation):
 - Scorching would only take place during winter and early spring months when vegetation is in a cotyledon or seedling stage, and small-statured enough to allow for a complete visual survey to ensure that snakes and frogs are not in the treatment area.
- Brushcut, mow, or chainsaw.: mechanical equivalent of cutting, but faster. Excellent for removing large trees, patches of plants that respond to cutting or for eliminating inflorescences

from mature plants before they set seed. Examples include annual and perennial grasses, other annual or biennial species.

3) Chemical Control

- Stump-cutting and painting: Stump-cutting and painting poses very little threat to the San Francisco garter snake and California red-legged frog as it does not involve soil disturbance nor will it introduce pesticides into an area where reptiles and amphibians may contact them. In this method, stems or trunks are cut and a small amount of GGNRA approved herbicide applied to the growing tissue in the cut stem. No herbicide direct stump applications will be allowed in riparian or wetland habitats supporting special status species except in the dry season. No herbicide run-off would be permitted. In order to ensure that amphibians and reptiles do not come into contact with the herbicide, stems would not be cut less than 6 inches from the ground.
- Foliar spray application will not be used in the vicinity of wetland and riparian areas, unless the site has dried out completely. Herbicides would not be applied in any area where surface flow would transport herbicide residue into Sanchez Creek, or in any pond on or adjacent to Mori Point unless such application is approved by the GGNRA IPM specialist or USFWS.
- All herbicide use will be administered through the park's Integrated Pest Management (IPM) Coordinator, and only licensed personnel will be allowed to apply pesticides. All herbicide use for project actions will be reported monthly to the IPM Coordinator. No herbicide foliar spraying or direct stump applications will be allowed in riparian or wetland habitats supporting special status species except in the dry season. Foliar herbicide applications beyond the riparian corridor are not approved where saturated soils are present, at wind speeds over 5 miles per hour, or when weather conditions facilitate herbicide movement toward drainages. All herbicide use is administered through each park's integrated pest management coordinator.

H. *Wetlands*

The following serve as Best Management Practices (BMPs) for GGNRA actions that may have adverse impacts on wetlands (per *Procedural Manual #77-1: Wetland Protection*). Additional BMPs may be appropriate depending on local conditions or special circumstances. These also serve as "conditions" that must be met for the actions listed in Section 4.2.A of these procedures to qualify as "excepted."

- 1) Effects on hydrology: Action must have only negligible effects on site hydrology, including flow, circulation, velocities, hydroperiods, water level fluctuations, and so on.
- 2) Water quality protection and certification: Action is conducted so as to avoid degrading water quality to the maximum extent practicable. Measures must be employed to prevent or control spills of fuels, lubricants, or other contaminants from entering the waterway or wetland. Action is consistent with state water quality standards and Clean Water Act Section 401 certification requirements (check with appropriate state agency).
- 3) Erosion and siltation controls: Appropriate erosion and siltation controls must be maintained during construction, and all exposed soil or fill material must be permanently stabilized at the earliest practicable date.
- 4) Effects on fauna: Action must have only negligible effects on normal movement, migration, reproduction, or health of aquatic or terrestrial fauna, including at low flow conditions.
- 5) Proper maintenance: Structure or fill must be properly maintained so as to avoid adverse impacts on aquatic environments or public safety.

- 6) Heavy equipment use: Heavy equipment use in wetlands must be avoided if at all possible. Heavy equipment used in wetlands must be placed on mats, or other measures must be taken to minimize soil and plant root disturbance and to preserve preconstruction elevations.
- 7) Stockpiling material: Whenever possible, excavated material must be placed on an upland site. However, when this is not feasible, temporary stockpiling of excavated material in wetlands must be placed on filter cloth, mats, or some other semi-permeable surface, or comparable measures must be taken to ensure that underlying wetland habitat is protected. The material must be stabilized with straw bales, filter cloth, or other appropriate means to prevent reentry into the waterway or wetland.
- 8) Removal of stockpiles and other temporary disturbances during construction: Temporary stockpiles in wetlands must be removed in their entirety as soon as practicable. Wetland areas temporarily disturbed by stockpiling or other activities during construction must be returned to their pre-existing elevations, and soil, hydrology, and native vegetation communities must be restored as soon as practicable.
- 9) Topsoil storage and reuse: Revegetation of disturbed soil areas should be facilitated by salvaging and storing existing topsoil and reusing it in restoration efforts in accordance with NPS policies and guidance. Topsoil storage must be for as short a time as possible to prevent loss of seed and root viability, loss of organic matter, and degradation of the soil microbial community. Salvaged topsoil should not be pile taller than 2 feet high and 3 feet wide, and piles should be windrowed to retain viability of the microorganisms.
- 10) Native plants: Where plantings or seeding are required, native plant material must be obtained and used in accordance with NPS policies and guidance. Management techniques must be implemented to foster rapid development of target native plant communities and to eliminate invasion by exotic or other undesirable species.
- 11) Boardwalk/bridge elevations: Minimizing shade impacts, to the extent practicable, should be a consideration in designing boardwalks and similar structures. (Placing a boardwalk/bridge at an elevation above the vegetation surface at least equal to the width of the boardwalk is one way to minimize shading.)
- 12) Coastal zone management: Action must be consistent, to the maximum extent practicable, with state coastal zone management programs.
- 13) Endangered species: Action must not jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, including degradation of critical habitat (see NPS Management Policies (1988) and guidance on threatened and endangered species).
- 14) Historic properties: Action must not have adverse effects on historic properties listed or eligible for listing in the NRHP.

I. *Invasive Non-Native Plant Introduction Control*

- 1) All vehicles will be brought in cleaned and free of weeds to prevent the spread and/or introduction of invasive plant species.
- 2) Appropriate excavated soil and aggregate materials from other projects within the GGNRA will be reused before allowing the importation of materials from outside the Park. Soils and vegetation contaminated with weed seeds from within the GGNRA would be segregated and disposed of or treated as appropriate.
- 3) At the direction of the Biological Monitor, restrictions will be placed on the movement or deposition of fill, rock, or other materials containing weed seed or viable plant cuttings to areas

relatively free of weeds.

J. *Erosion Control and Water Quality*

- 1) These BMPs include measures guiding the management and operation of construction sites to control and minimize the potential contribution of pollutants to storm runoff. These measures address procedures for controlling erosion and sedimentation and managing all aspects of the construction process to ensure control of potential water pollution sources. Erosion and sedimentation control practices typically include:
 - Construction will be limited to the dry-weather months, to the greatest extent practical.
 - Erosion and sedimentation control measures, such as rice straw mulch, sediment traps, check dams, geofabrics, drainage swales, sand bag dikes and/or straw wattles would be installed wherever deemed appropriate to eliminate the potential for sediment discharge into storm water and into wetlands and creeks from project construction. Erosion control structures will be installed concurrently with construction so that run-off will be deflected away from sensitive habitats. Fiber netting that has a mesh size smaller than 0.25 inches will be used to ensure that neither of these species gets trapped in the material. Plastic mono-filament erosion control matting shall not be used for erosion control where frogs or snakes may become entangled or trapped in it.
 - Erosion control measures and mulches that contain non-native plant seeds would be prohibited. Only rice straw should be permitted to prevent inadvertent introduction of wheat and barley species.
 - Stockpiled or disturbed soils would be temporarily covered with straw, matting, netting (no mono-filament plastic netting), or plastic sheeting. All open trench areas would be covered at the end of work day.
 - Waste and excess excavated materials would be stockpiled outside of drainages, and contained with appropriate silt control.
 - Unless no feasible alternative is available, heavy equipment use in areas with soils that are undisturbed, saturated or subject to extensive compaction would be prohibited. Where staging of heavy equipment, vehicles or stockpiling is unavoidable, the limit of allowable disturbance will be clearly demarcated by staking, flagging or fencing.
 - Erosion and sediment control measures would be implemented where project actions could leave soils exposed to runoff prior to revegetation. Areas disturbed by equipment or vehicles will be rehabilitated as quickly as possible to prevent erosion, discourage the spread of nonnative plants and address soil compaction. Techniques, including decompacting and recontouring to natural topography, compacting to natural, soil stabilization, and removal and monitoring of nonnative plants, will be used for rehabilitation efforts.
 - After tree felling, roots would be left in place in areas with highly erosive soils or on steep slopes. Stumps would be ground down to the ground level if appropriate.
 - Ensuring that all newly constructed impervious surfaces prevent, to the greatest extent feasible, increased water runoff volume and velocity, reduced water quality and reduced water infiltration.
 - Ensuring protection of normal movement, migration, reproduction, or health of aquatic fauna, including low flow conditions;
 - Properly maintaining structures or fill so as to avoid adverse impacts to aquatic environments and public safety;

- Placing excavated fill on non-sensitive upland sites, and stabilizing all material with compatible erosion control techniques;
- Designing projects to prevent alterations to drainage patterns or water movement. The design of trail features that intersect natural surface water bodies, such as bridges or wooden boardwalks, would include measures to avoid or reduce interference with the feature's natural flow dynamics;
- Placement and construction of new trails to prevent erosion and to minimize disruption to natural geologic processes, such as soils and slopes susceptible to erosion, minimize concentrated runoff, reduce sediment transport, and improve the quality of collected surface water. Trail slopes and gradients would comply with standard guidelines so that concentrated quantities of surface water would not run off at velocities capable of removing trail base material.
- Appropriate design would drain surface water from the trail to avoid ponding and development of soft, muddy surfaces that can lead to soil degradation and water quality impacts.

K. *Pollution Prevention*

- 1) Proper storage, use and disposal of chemicals, fuels, and other toxic materials would be required.
- 2) Construction equipment would be required to be refueled only in upland areas and in conformance with the Avoidance Zones described above to prevent fuel spills near sensitive habitats. Equipment would be inspected for hydraulic and oil leaks regularly as well as prior to use in the park.
- 3) All heavy equipment working in the GGNRA would be required to carry emergency spill containment materials. For example, pans should be placed under equipment that is stored onsite to reduce potential for leaking oil and other substances onto park lands. Absorbent materials should be on hand at all times to absorb any minor leaks and spills.
- 4) An Emergency Response Plan will be prepared by the construction and tree removal contractor(s), approved by NPS, and implemented during project implementation.

L. *Fugitive Dust Control Measures*

- 1) All active construction areas may be watered where soil is exposed to control dust frequency, depending on type of operation and wind exposure.
- 2) A person or persons would be designated to oversee the implementation of a comprehensive dust control program and to increase watering, as necessary.
- 3) All trucks hauling soil, sand, and other loose materials will be covered, or all trucks will be required to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer) in accordance with Section 23114 of the California Vehicle Code during transit to and from the site.
- 4) Inactive storage piles will be covered.

M. *Trail Construction*

Drainage Control: Trails in hilly terrain are particularly subject to erosion caused by water movement. Design and construction errors can allow water to build up volume and velocity, which often causes trail damage. There are several basic design strategies to improve drainage

control, such as using alignments perpendicular to sheetflow direction and full or half bench construction.

- *Outsloping:* Outsloping is slightly elevating the uphill edge of a trail. It encourages water to flow across the trail surface and reduces the potential for erosion. All proposed trail designs include outsloping. Full bench construction provides a more stable trailbed. Where cross slopes are not steep (generally less than 30 percent), half bench construction may be used.
- *Rolling Grade Dips:* Rolling grade dips are short sections of trail that channel water off the trail surface. Grade dips work best on trails with slow, steady grades and are best placed at naturally occurring drainage ways. Typically, trails are outsloped more at the point of the grade dip to provide better drainage. Grade dip backslopes should be about 1.2 to 1.8 m (4 to 6 ft) long to eliminate abrupt grade changes that may be barriers to access. For this reason, dips are preferable to both waterbars and open culverts. They typically require less maintenance than covered culverts, which can easily become clogged with leaves or other debris.

Trails in Wet Areas: Trails in the proximity of areas with seasonal or permanent soft and water-saturated soils pose problems for visitor enjoyment and for resource protection and maintenance. Trail users often walk to trail sides to avoid wet patches, which can cause destruction of adjacent vegetation and surface soil horizons. However, relocating these trails to higher or drier ground may not benefit the resource if the existing trail provides special benefits to users or if rerouting the trail would disturb sensitive habitat areas. Providing a hardened trail surface in the current trail alignment may be the best choice. Techniques that allow access for users with disabilities are preferred.

- *Surface Reinforcing:* Placing flat stones or cobbles on the trail surface, in combination with geotextile or sheet drain materials, is an aesthetically pleasing way to provide a stable trail surface in wet areas. Since water can pass through the entire structure, this solution offers the additional advantage of only minimally disrupting existing drainage patterns. Another alternative is a short, concrete-paved section that would be more accessible for people using wheelchairs.
- *Boardwalk/Bridge:* Trail structures such as bridges help maintain drainage patterns. They can be constructed of timber or recycled plastic lumber. To maximize accessibility for people with disabilities, bridge entrances and exits should be at grade rather than elevated or ramped. Additional maintenance might be required to ensure that surfaces that adjoin the entrances and exits do not vary more than 50 mm (2 in) from the bridge surface.
- *Drainage Lens:* The low-volume water flow caused by ephemeral springs or seeps can often be managed with a drainage lens. The area beneath the trail bed should be filled with progressively smaller quarry rock and then capped with fine aggregate or suitable native fill. Sandwiching the rock lens between two layers of geotextile material would provide a more stable base, and would prevent rock from mixing with surrounding soils.

Trails on Steep Cross Slopes: Steep slopes present many challenges for safe and sensitive trail design. Trail cuts on steep slopes increase the visual impact and the area of disturbance and often require special measures to stabilize the slope, such as slope protection or retaining walls. In some cases, stairways may also be needed. Trail structures and retaining walls, when

required, should be designed to minimize impact on natural and cultural resources and should use materials appropriate to the area's landscape management zone.

- *Area Avoidance and Trail Relocation:* When possible, avoid locating trails on steep slopes. Where trails must cross a steep slope, consider a minimum width trail.
- *Reinforced Backslope or Retaining Wall:* Depending on soil type, backslope cuts into hillsides may need protection in order to prevent severe erosion and slope destabilization. Backslope reinforcing and protection can be provided by a permanent structure or by temporary measures during revegetation. Retaining devices may be as simple as a log curb, or they may need to be designed by a structural engineer. Retaining materials may be poured-in place or pre-cast concrete segments, stones or timber from vegetation management practices, depending on the landscape management zone. All retaining structures must allow water to drain around or through the wall and not accumulate behind it. Stepped-back wall construction may provide opportunities for more planting. Green wall systems (a structure permeated by plantings) may be an acceptable alternative to retaining walls in some areas. Ongoing maintenance, including repair, replacement and removal of broken or detached components, must be provided for all retaining structures.
- *Trail Structure:* Boardwalks, stairways, and decks may be used where standard cut-and-fill techniques are inappropriate. For example, on steep trails on sandy or loose soils, stairways are recommended to avoid excessive erosion. Steel deck structures would allow light to penetrate to the vegetation below and reduce impacts on habitats sensitive to light.

Trails on Flat Grades: Since trails exist in dynamic environments, it is not possible to keep them clean and dry – especially when they're on primarily level terrain. Without proper drainage, trails on level ground tend to pond and collect debris, creating obstacles for all users. This creates a cycle that further degrades the trail and surrounding lands. Proper trail design can help mitigate this problem. There are several approaches for providing good drainage. The goal in all cases is to maintain a firm, stable, slip-resistant surface that is free of ponding.

- *Above Grade Trail:* One technique is to elevate a trail slightly, about 75 mm to 150 mm (3 in to 6 in), and provide drainage swales on each side. Using a gravel bed to elevate the trail would provide additional subsurface drainage. Raised trails are often used in conjunction with drainage lenses to facilitate water movement. An elevated trail offers a more convenient pathway for users during wet periods, provides the greatest degree of accessibility for persons with disabilities, and may require less maintenance.
- *Boardwalks :* This approach also provides an accessible trail surface. Boardwalks are often the most appropriate solution on erodible soils, such as sand or other loose, uncompacted soil.

Eroding and Hazardous Trail Edges: Edge protection has two purposes: to protect the trail and adjacent resources, and to protect the user. Clearly defined edges help keep users of all types on the established trail surface and help protect resources. Properly constructed edges also protect trails from water damage and erosion. Edge protection can also increase trail safety for various user groups. For example, a raised curb at least 75 mm (3 in) high or a guardrail may help a person using a wheelchair keep on track. However, some types of edge protection may be hazardous for bicyclists.

- *Edge Stabilization:* Edge protection is sometimes required to stabilize the trail structure, and prevent erosion of edges and eventual undermining of the trail base. Reinforcement of both sides of the trailbed can improve long-term sustainability. Soft surfaces such as those proposed for walking or jogging on the edges of multiple-use trails generally require full depth edge protection to prevent breakdown of trail edges. Since trails pass through many different environments, including sensitive natural habitat, edge protection should be consistent with the setting.
- *Edge Safety:* Trail edge safety provisions are sometimes required and must be appropriate to the trail user group and the setting. On multiple-use trails, edge protection and barriers must be designed for bicycle safety. For example, a raised curb that might aid a wheelchair user should not be located immediately adjacent to a bicycle way or paved portion of a multiple-use trail, unless the trail is widened to provide buffers. All vertical structures such as curbs and railings should be set back a minimum of 0.6 m (2 ft) from the bicycle way. Where required for trail user safety immediately adjacent to a steep drop off, safety railings with a height of 1.1 m (42 in) should be provided. However, because railings can be a visual intrusion in a natural setting, they should be used only when there is no other alternative.
- *Reducing Hazards at Drop-offs:* An effective strategy for reducing hazardous conditions on hillside trails (with or without additional edge protection) is to widen the trail and plant vegetation at the trail's edge.

Trails on Sandy Soils: Maintaining a stable trail surface can be particularly challenging in areas with sandy soils. Solutions depend on factors such as the relative sensitivity of the surrounding habitat, continuing maintenance costs, accessibility requirements, and issues specific to each landscape management zone.

- *Subsurface Geogrids:* Geogrids or geocells, when used in combination with geotextiles, provide a relatively unobtrusive means of stabilizing sandy trails. The geogrid confinement chambers distribute trail tread loads over a greater area and reduce settling, both of which help keep trail surfaces intact, in place and dry. The geotextile material provides separation between saturated soil and the tread fill, or increased containment over a sand base. Permeable tread fill provides drainage if the trail is built with a grade or on a sideslope. Imported soils should not be used for tread fill in areas of sensitive natural habitat.
- *Permanent and Moveable Above-Grade Trail Structures:* Boardwalks, which are permanent trail structures described in BMP 10-2, Boardwalks, are traditionally used for access across sandy soils. Another option is textured panels with drain holes, which are installed directly on the surface without excavation (Figure C-15). These panels meet current accessibility guidelines and can be relocated. They may require additional maintenance, such as sweeping and readjustment of linked panels to provide a uniform surface. Sand ladders are a series of logs connected by cable, such as the one in use on the dunes just south of Battery Crosby. They are an option for sandy trails with a steep linear grade. Sand ladders do not provide an accessible route for people with disabilities. Periodic maintenance is required to restore sand ladders to grade level after sand accumulates on the surface. Although temporary or moveable beach access routes are permitted, there are currently no recommendations for products that meet accessibility requirements.

Trails Damaged by Vehicle Use: Maintenance vehicles can damage trails that were not designed to support vehicular traffic. Trail structural stability and strength should be increased on pedestrian and multiple-use trails that will be used by maintenance vehicles. Since many trails are located in areas where sub-grades have a low bearing strength or are poorly drained, sub-bases and trail surfaces would need to be thicker than standard practice to support greater design loads.

- *Geotextile Underlay and Deeper Sub-Base:* Geotextiles can promote trail structural stability and increase the strength of trail cross sections. Wherever maintenance vehicle use is expected, geotextiles should be used to keep trail sub-bases intact and reinforce the structural qualities of trail subgrades. In some cases, the depth of trail subbases should be increased to 0.2 m (8 in).

Non-Designated Trails Requiring Closure: Although considered convenient by users, non-designated trails are often unsafe, contribute to the loss of plant communities, and disturb wildlife. They also impact water resources through erosion and soil compaction. In order to protect Mori Point's unique natural resources, non-designated trails would be closed.

- *Entrance Point Closures and Signs:* Obscuring the entrance to non-designated trails with brush piles or permanent or temporary barriers, such as fences and signs, can discourage the use of non-designated trails. Fencing should be kept to a minimum or used as a temporary measure to protect revegetation areas until these areas are well established. Trail closure signs might be installed temporarily until vegetation is established. Signs or notices posted at trailheads can inform people of the need for social trail closures and encourage them to comply with trail closures. Natural resources staff would help time the trail closures, to ensure that there is adequate time for seed and/or plant collection and salvage, and nursery propagation for revegetation.
- *Vegetation Restoration:* There are several effective techniques that can be used to rehabilitate areas damaged by non-designated trails. For instance, it might be necessary to camouflage the trail surface to discourage continued use. One technique is vertical mulch or brushing-in, where materials are collected from the immediate vicinity and "planted" into the trail surface. Vertical mulch can facilitate the deposition of blowing soil, organic debris, and seeds while creating a protected site for plant reestablishment. Specific prescriptions for plant establishment would be done in consultation with park vegetation restoration specialists. In heavily eroded areas, native soil fill, grading, and temporary check dams may help slow and disperse water flow and encourage the deposition of sediments in ruts or low points

Mitigation Measure Summary Table

IMPACT TOPIC	MITIGATION
Geology and Soils	GGNRA would prohibit construction activities in any site area with seismic hazards until geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development/restoration plans.
Hydrology and Water Quality	Construction will be limited to the dry-weather months to the greatest extent practicable.
Hydrology and Water Quality	Areas disturbed by equipment or vehicles will be rehabilitated as quickly as possible to prevent erosion, discourage the spread of nonnative plants and address soil compaction.
Hydrology and Water Quality	Appropriate design would drain surface water from the trail to avoid ponding and development of soft, muddy surfaces that can lead to soil degradation and water quality impacts.
Hydrology and Water Quality	Erosion and sediment control measures would be implemented where project actions could leave soils exposed to runoff prior to revegetation. Erosion control measures would be installed wherever necessary during construction to eliminate the potential for sediment discharge into stormwater, wetlands, and creeks.
Visitor Safety	As per recommendation from the SMCMAAD, monitoring of mosquito populations and possible application of <i>Bacillus thuringensis</i> would be implemented.
Visitor Safety	Advanced notification of construction work, detour signage, and construction fencing will be implemented to restrict visitors from hazardous areas during construction.
Visitor Use and Recreation	Hours of construction will be limited and restricted between the hours of 8:00 p.m. until 7:00 a.m., would not occur on weekends, and established trails will be rerouted during construction.
Noise	Use of powered construction equipment will comply with the City of Pacifica Municipal Code, Sec. 5-10.03. Enumerated, which prohibits construction noise at night from 8:00 p.m. until 7:00 a.m. Neighbors would also be given notice prior to any construction activities.
Noise	Noise generated by the construction equipment will be reduced by proper muffling of machinery.
Noise	Construction vehicles and equipment will not idle when not in use.
Biological Resources	All vehicles will be brought in cleaned and free of weeds to prevent the spread and/or introduction of invasive plant species.
Biological Resources	Soils and vegetation contaminated with weed seeds would be segregated and disposed of or treated as appropriate.
Biological Resources	At the discretion of the project Biological Monitor, restrictions will be placed on the movement or deposition of fill, rock, or other materials containing weed seed or viable plant cuttings to areas relatively free of weeds.
Biological Resources	No earthmoving or soil disturbing work shall occur in the vicinity of the "Bowl" or existing ponds or wetlands between November 15 and April 15, the breeding season for California red-legged frog and the season when San

	Francisco garter snake are inactive in their winter burrows.
Biological Resources	Vegetation in all construction areas will be progressively cleared by hand equipment to a height of 4 inches and checked for presence of snakes prior to ground-disturbance and construction equipment or vehicles entering the sites. Once vegetation is cleared, a pre-construction survey for the San Francisco garter snake will be conducted in the impact area.
Biological Resources	Prior to construction near wetlands or ponds, exclusion fencing will be constructed and all rodent burrows in the construction area will be hand excavated until the burrows terminates or until a maximum depth of 30 centimeters in areas where soil or fill will be removed or placed.
Biological Resources	Speed limits of 10 miles per hour will be posted on all access roads.
Biological Resources	A Biological Monitor will inspect for snakes and frogs underneath any vehicle that is parked for 30 minutes or more, immediately prior to moving the vehicle.
Biological Resources	Exclusion fencing gates will be closely monitored throughout construction to ensure no snakes enter the area.
Biological Resources	Personnel who detect any suspected San Francisco garter snake or California red-legged frog on-site will immediately report their finding to a Biological Monitor for positive identification. Non-permitted personnel will not attempt to capture or move any snake or frog detected. If the Biological Monitor determines that the animal is not a San Francisco garter snake or California red-legged frog, the Biological Monitor may hand capture and move the animal to suitable habitat outside the construction area. If the Biological Monitor determines that the detected animal is a San Francisco garter snake or a California red-legged frog, or is unable to positively identify the animal, then the Biological Monitor will notify the permitted biologist for appropriate action.
Biological Resources	A biologist holding a valid Scientific Collection Permit from the U.S. Fish and Wildlife Service will be on call or on-site to handle any San Francisco garter snakes or California red-legged frogs encountered during pre-construction and construction activities. Only a holder of a valid Scientific Collection Permit from the USFWS will handle San Francisco garter snakes. California red-legged frogs will only be handled by a holder of a valid Scientific Collection Permit from the USFWS or a USFWS-approved Monitor.
Biological Resources	All excavated holes and trenches will be either covered at the end of the workday, ramped or escape boards will be placed in trench to allow the animals to escape. Trenches will be inspected each morning and late afternoon by the Biological Monitor as well as before the trench is filled. The permitted biologist will relocate any San Francisco garter snake or California red-legged frog individuals found.
Biological Resources	Equipment and trucks used for construction should utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, and installation of sound blanket around the project site, wherever feasible and necessary). Construction vehicles should be properly maintained

	and equipped with exhaust mufflers that meet state standards.
Biological Resources	Impact tools used for construction should be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust should be used. External jackets on the tools themselves and quieter procedures should be used wherever feasible.
Biological Resources	Invasive non-native plant removal would be conducted as follows so that any San Francisco garter snakes that may be hiding in vegetation can escape unharmed. First, search each clump or patch thoroughly for snakes. If a San Francisco garter snake is found, disturbing it is likely to make it hide more deeply in the vegetation, therefore, leave the clump or patch alone and check it again on a later day. If no San Francisco garter snake is found, cut the vegetation manually 1 to 2 feet above ground level and search it again (carefully). If no San Francisco garter snake is found, the remainder of the clump or patch can be removed.
Biological Resources	Current sterilization protocols will be followed for all wetland sampling and monitoring at Mori Point, to protect against chytrid and trematode infestation.
Biological Resources	Wetlands will be monitored for invasive aquatic species and removal will be conducted if found. During invasive non-native plant removal, if physical removal or destruction is planned, conduct the work as follows so that any San Francisco garter snakes that may be hiding in the grass can escape unharmed. First, search each clump or patch thoroughly for snakes. This should be done with caution, since there is some potential for rattlesnakes to be present. If a garter snake is found, disturbing it is likely to make it hide more deeply in the vegetation, therefore, leave the clump or patch alone and check it again on a later day. If no garter snake is found, cut the vegetation manually 1 to 2 feet above ground level and search it again (carefully). If no garter snake is found, the remainder of the clump or patch can be removed.
Biological Resources	Project activities including vegetation removal, grading, earth movement, or other activities involving mechanized equipment shall not be conducted during the bird-nesting season, from March 1 through July 31 st , unless a qualified biologist conducts a pre-project survey for nesting birds and determines that birds are not nesting within the project area. All pre-project surveys would be coordinated with the GGNRA Wildlife Ecologist. To the greatest extent possible, these activities will be planned and conducted outside bird-nesting season. If work is necessary during the bird-nesting season, vegetation shall be removed to a height of less than 8 inches prior to the nesting season (March 1 st through July 31 st) and throughout project activities to discourage the nesting of ground-dwelling bird species.
Biological Resources	In order to protect nesting raptors, trees shall not be removed between January 1 st and July 31 st unless qualified personnel conduct a pre-project survey for nesting birds and determine that birds are not nesting within the project area. If nesting raptors are detected, a qualified biologist will delineate a suitable buffer.
Biological Resources	Prior to implementation of proposed project activities, conduct visual surveys

	<p>within the Monterey pine and cypress groves on-site to determine the presence or absence of woodrat nests. If woodrat nests are located during this survey, avoid the nest(s) and establish a minimum protection buffer of 50 feet around each nest. Project activities requiring grading, mechanized equipment or vehicles, or large crews within the 25-foot protective buffer should only occur during the non-breeding season (October-November) to avoid noise impacts to any breeding woodrats that may occupy the nest from December through September. If project activities cannot avoid impacting or removing the nest, then the nest(s) should be dismantled by hand prior to grading or vegetation removal activities. The nest dismantling shall occur during the non-breeding season (October-November) and shall be conducted so that the nest material is removed starting on the side where most impacts will occur and ending on the side where the most habitat will be undisturbed, which will allow for any woodrats in the nest to escape into adjacent undisturbed habitat. If young are encountered during nest dismantling, the dismantling activity should be stopped and the material replaced back on the nest and the nest should be left alone and rechecked in 2-3 weeks to see if the young are out of the nest or capable of being out on their own (as determined by a qualified biologist); once the young can fend for themselves, the nest dismantling can continue.</p>
<p>Biological Resources</p>	<p>Prior to implementation of proposed project activities, conduct visual surveys on-site to determine the presence or absence of suitably sized burrows for badgers. If potential badger burrows are located on-site, surveys will be conducted at each burrow to determine the presence or absence of badgers. If badgers are determined to be present, a qualified biologist will be consulted to determine appropriate buffer distances from each occupied burrow to maintain during project activities, and possible project timing restrictions to avoid impacts to birthing individuals (most young are born in March and April⁹). If avoidance of impacts to occupied burrows is not feasible, then a qualified biologist shall implement a pre-construction program during the non-birthing season (Summer through Winter) to exclude badgers from their burrows by closing each burrow once the badger has emerged.</p>

⁹ Long 1973 (Long, C. A. 1973. Taxidea taxus. Mammal. Species. No. 26. 4pp.) from “California's Wildlife, Mammals, Badger. California Wildlife Habitat Relationships System, California Department of Fish and Game, 1983.”

Appendix F. U.S. Fish and Wildlife Service Letter with Species List for the Project

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United States Department of the Interior



FISH AND WILDLIFE SERVICE



Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

December 14, 2005

Document Number: 051214041937

Shannon Lucas
May & Associates, Inc.
730 Clementina Street
San Francisco, CA 94103

Subject: Species List for Mori Point Coastal Trail Construction, Habitat Restoration and Site Maintenance Project

Dear: Ms. Lucas

We are sending this official species list in response to your December 14, 2005 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested. You have stated that this list is for consultation with the Fish & Wildlife Service.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed, candidate and special concern species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be March 14, 2006.

Please contact us if your project may affect endangered or threatened species or if you

have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at www.fws.gov/sacramento/es/branches.htm.

Endangered Species Division



**Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 051214041937

Database Last Updated: November 3, 2005

CRITICAL HABITAT:

On August 11, 2005, the Service published a revised [critical habitat designation](#) for vernal pool species. It did not specify critical habitat locations on a species by species basis. If there are species on the list(s) below that were covered under the rule, they are shown because we believe that they are present in the area or may be affected by projects in the area, not because it has specifically been designated as critical habitat for them.

Quad Lists

MONTARA MOUNTAIN (448C)

Listed Species

Invertebrates

Haliotes sorenseni - white abalone (E)

Icaricia icarioides missionensis - mission blue butterfly (E)

Incisalia mossii bayensis - San Bruno elfin butterfly (E)

Fish

Eucyclogobius newberryi - tidewater goby (E)

Hypomesus transpacificus - delta smelt (T)

Oncorhynchus kisutch - coho salmon - central CA coast (E)

Oncorhynchus mykiss - Central California Coastal steelhead (T)

Oncorhynchus mykiss - Central Valley steelhead (T)

Oncorhynchus mykiss - Critical habitat, Central California coastal steelhead (X)

Amphibians

Rana aurora draytonii - California red-legged frog (T)

Reptiles

Thamnophis sirtalis tetrataenia - San Francisco garter snake (E)

Birds

Brachyramphus marmoratus - Critical habitat, marbled murrelet (X)

Brachyramphus marmoratus - marbled murrelet (T)

Charadrius alexandrinus nivosus - western snowy plover (T)

Diomedea albatrus - short-tailed albatross (E)

Haliaeetus leucocephalus - bald eagle (T)

Pelecanus occidentalis californicus - California brown pelican (E)

Rallus longirostris obsoletus - California clapper rail (E)

Sterna antillarum (=albifrons) *browni* - California least tern (E)

Mammals

Arctocephalus townsendi - Guadalupe fur seal (T)

Balaenoptera borealis - sei whale (E)

Balaenoptera musculus - blue whale (E)

Balaenoptera physalus - finback (=fin) whale (E)

Eubalaena glacialis - right whale (E)

Physeter catodon (=macrocephalus) - sperm whale (E)

Reithrodontomys raviventris - salt marsh harvest mouse (E)

Plants

Potentilla hickmanii - Hickman's potentilla (=cinquefoil) (E)

Proposed Species

Amphibians

Rana aurora draytonii - Critical habitat, California red-legged frog (PX)

Candidate Species

Invertebrates

Haliotes cracherodii - black abalone (C)

Species of Concern

Invertebrates

Cicindela hirticollis gravida - sandy beach tiger beetle (SC)

Coelus globosus - globose dune beetle (SC)

Hydrochara rickseckeri - Ricksecker's water scavenger beetle (SC)

Hydroporus leechi - Leech's skyline diving beetle (SC)

Lichnanthe ursina - bumblebee scarab beetle (SC)

Fish

Lampetra tridentata - Pacific lamprey (SC)

Pogonichthys macrolepidotus - Sacramento splittail (SC)

Spirinchus thaleichthys - longfin smelt (SC)

Amphibians

Rana boylei - foothill yellow-legged frog (SC)

Reptiles

Clemmys marmorata marmorata - northwestern pond turtle (SC)

Clemmys marmorata pallida - southwestern pond turtle (SC)

Phrynosoma coronatum frontale - California horned lizard (SC)

Birds

Agelaius tricolor - tricolored blackbird (SC)

Amphispiza belli belli - Bell's sage sparrow (SC)

Arenaria melanocephala - black turnstone (SC)

Athene cunicularia hypugaea - western burrowing owl (SC)

Buteo regalis - ferruginous hawk (SC)

Calidris canutus - red knot (SC)

Calypte costae - Costa's hummingbird (SC)

Carduelis lawrencei - Lawrence's goldfinch (SC)

Chaetura vauxi - Vaux's swift (SC)

Cypseloides niger - black swift (SC)

Elanus leucurus - white-tailed (=black shouldered) kite (SC)

Empidonax traillii brewsteri - little willow flycatcher (CA)

Falco peregrinus anatum - American peregrine falcon (D)

Geothlypis trichas sinuosa - saltmarsh common yellowthroat (SC)

Haematopus bachmani - black oystercatcher (SC)

Histrionicus histrionicus - Harlequin duck (SC)

Lanius ludovicianus - loggerhead shrike (SC)

Laterallus jamaicensis coturniculus - black rail (CA)

Limosa fedoa - marbled godwit (SC)
Melanerpes lewis - Lewis' woodpecker (SC)
Numenius americanus - long-billed curlew (SC)
Numenius phaeopus - whimbrel (SC)
Oceanodroma homochroa - ashy storm-petrel (SC)
Riparia riparia - bank swallow (CA)
Rynchops niger - black skimmer (SC)
Selasphorus rufus - rufous hummingbird (SC)
Selasphorus sasin - Allen's hummingbird (SC)
Sterna elegans - elegant tern (SC)

Mammals

Corynorhinus (=Plecotus) townsendii townsendii - Pacific western big-eared bat (SC)
Eschrichtius robustus - gray whale (D)
Eumops perotis californicus - greater western mastiff-bat (SC)
Myotis evotis - long-eared myotis bat (SC)
Myotis thysanodes - fringed myotis bat (SC)
Myotis volans - long-legged myotis bat (SC)
Myotis yumanensis - Yuma myotis bat (SC)
Neotoma fuscipes annectens - San Francisco dusky-footed woodrat (SC)

Plants

Abronia umbellata ssp. umbellata - pink sand-verbena (SLC)
Allium peninsulare var. franciscanum - Franciscan onion (SLC)
Amsinckia lunaris - bent-flowered fiddleneck (SLC)
Arabis blepharophylla - coast rock-cress (SLC)
Arctostaphylos andersonii - Santa Cruz manzanita (SLC)
Arctostaphylos montaraensis - Montara manzanita (SC)
Arctostaphylos regismontana - Kings Mountain manzanita (SLC)
Astragalus nuttallii var. virgatus - Nuttall's milk-vetch (SLC)
Astragalus pycnostachyus var. pycnostachyus - marsh milkvetch (=brine milk-vetch) (SLC)
Atriplex californica - California saltbush (SLC)
Castilleja affinis spp. affinis - Coast Indian paintbrush (SLC)
Castilleja ambigua ssp. ambigua - salt marsh owl's clover (=johnny-nip) (SLC)

Castilleja exserta ssp. latifolia - purple owl's-clover (=wideleaf Indian paintbrush) (SLC)

Chorizanthe cuspidata var. cuspidata - San Francisco Bay spineflower (SC)

Cirsium andrewsii - Franciscan thistle (SC)

Clarkia davyi - Davy's clarkia (SLC)

Dirca occidentalis - western leatherwood (SLC)

Eriogonum caninum - Tiburon buckwheat (SLC)

Erysimum franciscanum - San Francisco wallflower (SC)

Fritillaria liliacea - fragrant fritillary (= prairie bells) (SC)

Grindelia hirsutula var. maritima - San Francisco gumplant (SC)

Horkelia marinensis - Point Reyes horkelia (SC)

Lessingia arachnoidea - Crystal Springs lessingia (SC)

Linanthus grandiflorus - large-flowered (=flower) linanthus (SC)

Linanthus rosaceus - rose linanthus (SC)

Lupinus arboreus var. eximius - San Mateo tree lupine (SLC)

Malacothamnus arcutatus (= *M. fasciculat*) - arcuate bush mallow (SLC)

Silene verecunda ssp. verecunda - Mission Delores (=San Francisco) campion (SC)

Spartina foliosa - Pacific cordgrass (=California cordgrass) (SLC)

Tanacetum camphoratum - dune (=camphor) tansy (SC)

Triphysaria floribunda - San Francisco owl's-clover (SC)

County Lists

No county species lists requested.

Key:

- (E) *Endangered* - Listed (in the Federal Register) as being in danger of extinction.
- (T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
- (P) *Proposed* - Officially proposed (in the Federal Register) for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the [National Marine Fisheries Service](#). Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(CA) Listed by the State of California but not by the Fish & Wildlife Service.

(D) *Delisted* - Species will be monitored for 5 years.

(SC) *Species of Concern*/(SLC) Species of Local Concern - Other species of concern to the Sacramento Fish & Wildlife Office.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey [7½ minute quads](#). The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regard-less of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the quad or quads covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the nine surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

State-Listed Species

If a species has been listed as threatened or endangered by the State of California, but not by us nor by the National Marine Fisheries Service, it will appear on your list as a Species of Concern. However you should contact the California Department of Fish and Game [Wildlife and Habitat Data Analysis Branch](#) for official information about these species.

Your Responsibilities Under the Endangered Species Act

All plants and animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.

During formal consultation, the Federal agency, the applicant

and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal

Regulations (50 CFR 17.95). See our [critical habitat page](#) for maps.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

[Species of Concern](#)

Your list may contain a section called Species of Concern. This is an informal term that refers to those species that the Sacramento Fish and Wildlife Office believes might be in need of concentrated conservation actions. Such conservation actions vary depending on the health of the populations and degree and types of threats. At one extreme, there may only need to be periodic monitoring of populations and threats to the species and its habitat. At the other extreme, a species may need to be listed as a Federal threatened or endangered species. Species of concern receive no legal protection and the use of the term does not necessarily mean that the species will eventually be proposed for listing as a threatened or endangered species.

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed, candidate and special concern species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be March 14, 2006.

Appendix G. Special Status Species with Potential to Occur at Mori Point.

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Exhibit 4: Environmental Assessment and FONSI

Appendix G. Special Status Species with Potential to Occur within the Mori Point Project Area

Scientific name	Common name	Status ¹				General habitat	Micro habitat	Potential to occur within Proposed Project Area	Source ²	Blooming period
		Federal	State	CDFG	CNPS					
Plants										
<i>Abronia umbellata</i> ssp. <i>breviflora</i>	Pink sand-verbena	FSLC			1B	COASTAL DUNES AND COASTAL STRAND.	FOREDUNES AND INTERDUNES WITH SPARSE COVER.	Low; not observed on-site.	FWS	Jun-Oct
<i>Allium peninsulare</i> var. <i>franciscanum</i>	Franciscan onion				1B	CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND.	CLAY SOILS; OFTEN ON SERPENTINE. DRY HILLSIDES. 100-300M.	Low; not observed on-site.	CNDDDB	May-Jun
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck				1B	CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND.	50-500M.	Low; not observed on-site.	CNDDDB	Mar-Jun
<i>Arabis blepharophylla</i>	coast rock cress				4	BROADLEAVED UPLAND FOREST, COASTAL BLUFF SCRUB, COASTAL PRAIRIE, COASTAL SCRUB	3-1100M.	Low; not observed on-site.	CNPS	Feb-May
<i>Astragalus nuttallii</i> var. <i>nuttallii</i>	Nuttall's milk-vetch				4	COASTAL BLUFF SCRUB, COASTAL DUNES	3-120M.	Not present per focused survey conducted in 8/02	CNPS	Jan-Nov
<i>Calandrinia breweri</i>	Brewer's calandrinia				4	CHAPARRAL, COASTAL SCRUB (SANDY OR LOAMY, DISTURBED SITES AND BURNS)	10-1220M.	Low; not observed on-site.	CNPS	Mar-Jun
<i>Castilleja affinis</i> var. <i>affinis</i>	Coast Indian paintbrush	FSLC				CHAPARRAL, COASTAL SCRUB (SANDY SOILS)	0-1200M.	Low; not observed on-site.	FWS	
<i>Castilleja exserta</i> ssp. <i>latifolia</i>	Purple owl's-clover	FSLC				COASTAL BLUFFS, DUNES.	0-100M.	Low; not observed on-site.	FWS	
<i>Centromadia parryi</i> ssp. <i>parryi</i>	pappose tarplant				1B	COASTAL PRAIRIE, MEADOWS AND SEEPS, COASTAL SALT MARSH, VALLEY AND FOOTHILL GRASSLAND.	VERNALLY MESIC, OFTEN ALKALINE SITES. 2-420M.	Low; not observed on-site.	CNDDDB	May-Nov
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>	San Francisco Bay spineflower				1B	COASTAL BLUFF SCRUB, COASTAL DUNES, COASTAL PRAIRIE, COASTAL SCRUB.	CLOSELY RELATED TO C. PUNGENS. SANDY SOIL ON TERRACES AND SLOPES. 5-550M.	Not present per focused survey conducted in 8/02	CNDDDB	Apr-Aug
<i>Chorizanthe robusta</i> var. <i>robusta</i>	robust spineflower	FE			1B	CISMONTANE WOODLAND, COASTAL DUNES, COASTAL SCRUB.	SANDY TERRACES AND BLUFFS OR IN LOOSE SAND. 3-120M.	Not present per focused survey conducted in 8/02	CNDDDB	Apr-Sep
<i>Cirsium occidentale</i> var. <i>compactum</i>	compact cobwebby thistle				1B	CHAPARRAL, COASTAL DUNES, COASTAL PRAIRIE, COASTAL SCRUB.	ON DUNES AND ON CLAY IN CHAPARRAL; ALSO IN GRASSLAND. 5-155M.	Low; not observed on-site.	CNDDDB	Apr-Jun
<i>Clarkia davyi</i>	Davey's clarkia	FSLC				COASTAL GRASSLAND, BLUFFS		Low; not observed on-site.	FWS	
<i>Collinsia multicolor</i>	San Francisco collinsia				1B	CLOSED-CONE CONIFEROUS FOREST, COASTAL SCRUB.	ON DECOMPOSED SHALE (MUDSTONE) MIXED WITH HUMUS. 30-250M.	Low; not observed on-site.	CNDDDB	Mar-May
<i>Erysimum franciscanum</i>	San Francisco wallflower				4	CHAPARRAL, COASTAL DUNES, COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND (OFTEN SERPENTINE OR GRANITIC)	0-550M.	Low; not observed on-site.	CNPS	Mar-Jun
<i>Fritillaria agrestis</i>	stinkbells				4	CHAPARRAL, CISMONTANE WOODLAND, PINYON AND JUNIPER WOODLAND, VALLEY AND FOOTHILL GRASSLAND (CLAY, SOMETIMES SERPENTINE)	10-1555M.	Low; not observed on-site.	CNPS	Mar-Jun
<i>Gilia capitata</i> ssp. <i>chamissonis</i>	dune gilia				1B	COASTAL DUNES, COASTAL SCRUB.	2-200M.	Low; not observed on-site.	CNDDDB	Apr-Jul
<i>Grindelia hirsutula</i> var. <i>maritima</i>	San Francisco gumplant				1B	COASTAL SCRUB, COASTAL BLUFF SCRUB, VALLEY AND FOOTHILL GRASSLAND.	SANDY OR SERPENTINE SLOPES, SEA BLUFFS. 15-400M.	Not present per focused survey conducted in 8/02	CNDDDB	Aug-Sep
<i>Hesperovex sparsiflora</i> var. <i>brevifolia</i>	short-leaved evax				2	COASTAL BLUFF SCRUB, COASTAL DUNES.	SANDY BLUFFS AND FLATS. 0-200M.	Low; not observed on-site.	CNDDDB	Mar-Jun
<i>Horkelia cuneata</i> ssp. <i>sericea</i>	Kellogg's horkelia				1B	CLOSED-CONE CONIFEROUS FOREST, COASTAL SCRUB, CHAPARRAL.	OLD DUNES, COASTAL SANDHILLS; OPENINGS. 10-200M.	Not present per focused survey conducted in 8/02	CNDDDB	Apr-Sep
<i>Horkelia marinensis</i>	Point Reyes horkelia				1B	COASTAL DUNES, COASTAL PRAIRIE, COASTAL SCRUB (SANDY)	5-350M.	Not present per focused survey conducted in 8/02	CNPS	May-Sep
<i>Leptosiphon acicularis</i>	bristly linanthus				4	CHAPARRAL, CISMONTANE WOODLAND, COASTAL PRAIRIE, VALLEY AND FOOTHILL GRASSLAND	55-1500M.	Low; not observed on-site.	CNPS	Apr-Jul
<i>Leptosiphon croceus</i>	coast yellow leptosiphon				1B	COASTAL BLUFF SCRUB, COASTAL PRAIRIE.	10-150M.	Low; not observed on-site.	CNDDDB	Apr-May
<i>Leptosiphon grandiflorus</i>	large-flowered linanthus				4	COASTAL BLUFF SCRUB, CLOSED-CONE CONIFEROUS FOREST, CISMONTANE WOODLAND, COASTAL DUNES, COASTAL PRAIRIE, COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND (USUALLY SANDY)	5-1220M.	Not present per focused survey conducted in 8/02	CNPS	Apr-Aug
<i>Leptosiphon rosaceus</i>	rose leptosiphon				1B	COASTAL BLUFF SCRUB.	0-100M.	Not present within property, but found just outside boundary per focused survey conducted in 8/02	CNDDDB	Apr-Jul
<i>Lilium maritimum</i>	coast lily				1B	BROADLEAVED UPLAND FOREST, CLOSED-CONE CONIFEROUS FOREST, COASTAL PRAIRIE, COASTAL SCRUB, MARSHES AND SWAMPS (FRESHWATER), NORTH COAST CONIFEROUS FOREST	5-335M.	Not present per focused survey conducted in 8/02	CNPS	May-Aug
<i>Lotus formosissimus</i>	harlequin lotus				4	BROADLEAVED UPLAND FOREST, COASTAL BLUFF SCRUB, CLOSED-CONE CONIFEROUS FOREST, CISMONTANE WOODLAND, COASTAL PRAIRIE, COASTAL SCRUB, MEADOWS AND SEEPS, MARSHES AND SWAMPS (FRESHWATER), NORTH COAST CONIFEROUS FOREST, VALLEY AND FOOTHILL GRASSLANDS (WETLANDS, ROADSIDES)	0-700M.	Low; not observed on-site.	CNPS	Mar-Jul
<i>Lupinus eximius</i>	San Mateo tree lupine				3	CHAPARRAL, COASTAL SCRUB	90-550M.	Not observed on-site	CNPS	Apr-Jul

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Appendix G. Special Status Species with Potential to Occur within the Mori Point Project Area

Scientific name	Common name	Status ¹				General habitat	Micro habitat	Potential to occur within Proposed Project Area	Source ²	Blooming period
		Federal	State	CDFG	CNPS					
<i>Monardella undulata</i>	curly-leaved monardella				4	CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL DUNES, COASTAL PRAIRIE, COASTAL SCRUB, LOWER MONTANE CONIFEROUS FOREST (PONDEROSA PINE HILLS) / SANDY	0-305M.	Not present per focused survey conducted in 8/02	CNPS	May-Sep
<i>Pedicularis dudleyi</i>	Dudley's lousewort				1B	CHAPARRAL (MARITIME), CISMONTANE WOODLAND, NORTH COAST CONIFEROUS FOREST, VALLEY AND FOOTHILL GRASSLAND	60-900M.	Low; not observed on-site.	CNPS	Apr-Jun
<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i>	Gairdner's yampah				4	BROADLEAVED UPLAND FOREST, CHAPARRAL, COASTAL PRAIRIE, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS (MESIC)	0-365M.	Not present per focused survey conducted in 8/02	CNPS	Jun-Oct
<i>Piperia michaelii</i>	Michael's rein orchid				4	COASTAL BLUFF SCRUB, CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB, LOWER MONTANE CONIFEROUS FOREST	3-915M.	Not present per focused survey conducted in 8/02	CNPS	Apr-Aug
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>	Choris's popcorn-flower				1B	CHAPARRAL, COASTAL SCRUB, COASTAL PRAIRIE.	MESIC SITES. 15-100M.	Low; not observed on-site.	CNDDDB	Mar-Jun
<i>Plagiobothrys chorisianus</i> var. <i>hickmanii</i>	Hickman's popcorn-flower				4	CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL SCRUB, MARSHES AND SWAMPS, VERNAL POOLS	15-185M.	Low; not observed on-site.	CNPS	Apr-Jun
<i>Potentilla hickmanii</i>	Hickman's cinquefoil	FE	SE		1B	COASTAL BLUFF SCRUB, CLOSED-CONE CONIFEROUS FOREST, MEADOWS AND SEEPS, MARSHES AND SWAMPS.	FRESHWATER MARSHES, SEEPS, AND SMALL STREAMS IN OPEN OR FORESTED AREAS ALONG THE COAST. 5-125M.	Not present per focused survey conducted in 8/02	CNDDDB	Apr-Aug
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup				4	CISMONTANE WOODLAND, NORTH COAST CONIFEROUS FOREST, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS (MESIC)	15-470M.	Low; not observed on-site.	CNPS	Feb-May
<i>Sanicula hoffmannii</i>	Hoffmann's sanicle				4	BROADLEAVED UPLAND FOREST, CHAPARRAL, COASTAL SCRUB (OFTEN SERPENTINE OR CLAY)	30-300M.	Low; not observed on-site.	CNPS	Mar-May
<i>Sanicula maritima</i>	adobe sanicle		3		1B	MEADOWS AND SEEPS, VALLEY AND FOOTHILL GRASSLAND, CHAPARRAL, COASTAL PRAIRIE.	MOIST CLAY OR ULTRAMAFIC SOILS. 30-240M.	Low; not observed on-site.	CNDDDB	
<i>Silene verecunda</i> ssp. <i>verecunda</i>	San Francisco campion				1B	COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND, COASTAL BLUFF SCRUB, CHAPARRAL, COASTAL PRAIRIE.	OFTEN ON MUDSTONE OR SHALE; ONE SITE ON SERPENTINE. 30-645M.	Not present per focused survey conducted in 8/02	CNDDDB	Mar-Aug
<i>Tanacetum camphoratum</i>	Dune tansy	FSC				COASTAL DUNES	PREFERS SANDY SOILS, BRACKISH WATER	Low; not observed on-site.	FWS	
<i>Triphysaria floribunda</i>	San Francisco owl's-clover				1B	COASTAL PRAIRIE, VALLEY AND FOOTHILL GRASSLAND.	ON SERPENTINE AND NONSERPENTINE SUBSTRATE (SUCH AS AT PT. REYES). 10-160M.	Low; not observed on-site.	CNDDDB	Apr-Jun
<i>Triquetrella californica</i>	coastal triquetrella				1B	COASTAL BLUFF SCRUB, COASTAL SCRUB.	MOSS GROWING ON SOIL. 10-100M.	Low; not observed on-site.	CNDDDB	N/A
Invertebrates										
<i>Caecidotea tomalensis</i>	Tomales isopod					INHABITS LOCALIZED FRESH-WATER PONDS OR STREAMS WITH STILL OR NEAR-STILL WATER IN SEVERAL BAY AREA COUNTIES.		Moderate	CNDDDB	N/A
<i>Callophrys mossii bayensis</i>	San Bruno elfin butterfly	FE				COASTAL, MOUNTAINOUS AREAS WITH GRASSY GROUND COVER, MAINLY IN THE VICINITY OF SAN BRUNO MOUNTAIN, SAN MATEO COUNTY.	COLONIES ARE LOCATED ON STEEP, NORTH-FACING SLOPES WITHIN THE FOG BELT. LARVAL HOST PLANT IS SEDUM SPATHULIFOLIUM.	Low	CNDDDB	N/A
<i>Coelus globosus</i>	Globose dune beetle	FSC				Inhabitant of coastal sand dune habitat, from Bodega Head in Sonoma County south to Ensenada, Mexico.	Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation.	Low	FWS	N/A
<i>Danaus plexippus</i>	monarch butterfly					WINTER ROOST SITES EXTEND ALONG THE COAST FROM NORTHERN MENDOCINO TO BAJA CALIFORNIA, MEXICO.	ROOSTS LOCATED IN WIND-PROTECTED TREE GROVES (EUCALYPTUS, MONTEREY PINE, CYPRESS), WITH NECTAR AND WATER SOURCES NEARBY.	Low	CNDDDB	N/A
<i>Euphydryas editha bayensis</i>	Bay checkerspot butterfly	FT				RESTRICTED TO NATIVE GRASSLANDS ON OUTCROPS OF SERPENTINE SOIL IN THE VICINITY OF SAN FRANCISCO BAY.	PLANTAGO ERECTA IS THE PRIMARY HOST PLANT; ORTHOCARPUS DENSIFLORUS & O. PURPURSCENS ARE THE SECONDARY HOST PLANTS.	Low	CNDDDB	N/A
<i>Hydrochara rickseckeri</i>	Ricksecker's water scavenger beetle	FSC				Various water bodies.	Aquatic; known from the San Francisco Bay area.	Moderate	FWS	N/A
<i>Hydroporus leechi</i>	Leech's skyline diving beetle					AQUATIC.		Moderate	CNDDDB	N/A
<i>Ischnura gemina</i>	San Francisco Forktail Damselfly					ENDEMIC TO THE SAN FRANCISCO BAY AREA.	SMALL, MARSHY PONDS AND DITCHES WITH EMERGENT ANF FLOATING AQUATIC VEGETATION.	Present	CNDDDB	N/A
<i>Plebejus (Icaricia) icarioides missionensis</i>	Mission blue butterfly	FE				INHABITS GRASSLANDS OF THE SAN FRANCISCO PENINSULA.	THREE LARVAL HOST PLANTS: LUPINUS ALBIFRONS, L. VARIICOLOR, AND L. FORMOSUS, OF WHICH L. ALBIFRONS IS FAVORED.	Low	CNDDDB	N/A

Exhibit 4: Environmental Assessment and FONSI

Appendix G. Special Status Species with Potential to Occur within the Mori Point Project Area

Scientific name	Common name	Status ¹				General habitat	Micro habitat	Potential to occur within Proposed Project Area	Source ²	Blooming period
		Federal	State	CDFG	CNPS					
<i>Speyeria callippe callippe</i>	callippe silverspot butterfly	FE				RESTRICTED TO THE NORTHERN COASTAL SCRUB OF THE SAN FRANCISCO PENINSULA.	HOSTPLANT IS VIOLA PEDUNCULATA. MOST ADULTS FOUND ON E-FACING SLOPES; MALES CONGREGATE ON HILLTOPS IN SEARCH OF FEMALES.	Low	CNDDDB	N/A
<i>Speyeria zerene myrtleae</i>	Myrtle's silverspot	FE				RESTRICTED TO THE FOGGY, COASTAL DUNES/HILLS OF THE POINT REYES PENINSULA; EXTIRPATED FROM COASTAL SAN MATEO COUNTY.	LARVAL FOODPLANT THOUGHT TO BE VIOLA ADUNCA.	Low - considered extirpated in San Mateo County. Proposed actions include possible habitat restoration and re-introduction of the species.	CNDDDB	N/A
Amphibians and Reptiles										
<i>Rana aurora draytonii</i>	California red-legged frog	FT		CSC		LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.	REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.	Present	CNDDDB	N/A
<i>Emys (=Clemmys) marmorata</i>	western pond turtle			CSC		A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS & IRRIGATION DITCHES WITH AQUATIC VEGETATION.	NEED BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT FOR EGG-LAYING.	Moderate	CNDDDB	N/A
<i>Phrynosoma coronatum frontale</i>	California horned lizard	FSC		CSC		Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	Open areas for sunning, bushes for cover, patches of loose soil for burial, & abundant supply of ants & other insects.	Moderate	FWS	N/A
<i>Thamnophis sirtalis tetrataenia</i>	San Francisco garter snake	FE	SE			VICINITY OF FRESHWATER MARSHES, PONDS AND SLOW MOVING STREAMS IN SAN MATEO COUNTY AND EXTREME NORTHERN SANTA CRUZ COUNTY	PREFERS DENSE COVER & WATER DEPTHS OF AT LEAST ONE FOOT. UPLAND AREAS NEAR WATER ARE ALSO VERY IMPORTANT.	Present	CNDDDB	N/A
Birds										
<i>Agelaius tricolor</i>	Tricolored blackbird	FSC				(Nesting colony) highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California.	Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony.	Low - no known occurrences in San Francisco or San Mateo County (CNDDDB, Jones & Stokes 1997).	FWS	N/A
<i>Amphispiza belli belli</i>	Bell's sage sparrow	FSC				(Nesting) nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range.	Nest located on the ground beneath a shrub or in a shrub 6-18 inches above ground. Territories about 50 yds apart.	Low	FWS	N/A
<i>Arenaria melanocephala</i>	Black turnstone	FSC				Breeds in coastal Alaska. Winters on rocky coasts.	Strictly coastal species.	Low	FWS	N/A
<i>Athene cucularia hypugaea</i>	Western burrowing owl	FSC				(Burrow sites) open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation.	Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Low - no known occurrences in San Francisco or San Mateo County (CNDDDB). Project area not within report species range as of 1990 (FWS 2003).	FWS	N/A
<i>Buteo regalis</i>	Ferruginous hawk	FSC				(Wintering) open grasslands, sagebrush flats, desert scrub, low foothills & fringes of pinyon-juniper habitats.	Mostly eats lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Moderate	FWS	N/A
<i>Calidris canutus</i>	Red knot	FSC				Breeds on tundra; during migration, on tidal flats, rocky shores, and sandy beaches.	Often breeds with dowitchers.	Low	FWS	N/A
<i>Calypte costae</i>	Costa's hummingbird	FSC				Fairly common in desert washes, dry chaparral, and successional scrub.		Low	FWS	N/A
<i>Carduelis lawrencei</i>	Lawrence's goldfinch	FSC				(Nesting) nests in open oak or other arid woodland & chaparral, near water. Nearby herbaceous habitats used for feeding	Closely associated with oaks.	Low	FWS	N/A
<i>Chaetura vauxi</i>	Vaux's swift	FSC				(Nesting) redwood, douglas fir, & other coniferous forests. Nests in large hollow trees & snags. Often nests in flocks.	Forages over most terrains & habitats but shows a preference for foraging over rivers and lakes.	Low	FWS	N/A
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover	FT				Coastal beaches, sand spits, dune-backed beaches, beaches at river mouths, salt pans at lagoons and estuaries, mud flats, and man-made salt ponds.	Breeds primarily on coastal beaches from southern Washington to southern Baja California, Mexico. Overwintering population on Ocean Beach. Periodically sighted at other beaches.	Low	FWS	N/A
<i>Cypseloides niger</i>	Black swift	FSC				(Nesting) coastal belt of Santa Cruz & Monterey Co; central & southern Sierra Nevada; San Bernardino & San Jacinto Mtns.	Breeds in small colonies on cliffs behind or adj to waterfalls in deep canyons and sea-bluffs above surf; forages widely	Low	FWS	N/A
<i>Elanus leucurus</i>	White-tailed kite	FSC				(Nesting) rolling foothills/valley margins w/scattered oaks & river bottomlands or marshes next to deciduous woodland	Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Present - observed on-site.	FWS	N/A

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Appendix G. Special Status Species with Potential to Occur within the Mori Point Project Area

Scientific name	Common name	Status ¹				General habitat	Micro habitat	Potential to occur within Proposed Project Area	Source ²	Blooming period
		Federal	State	CDFG	CNPS					
<i>Empidonax traillii brewsteri</i>	Little willow flycatcher		SE			Breeds in shrubby vegetation in meadow and riparian woodlands, typically where there are mature, dense stands of willows, cottonwoods, or alders.		Low	FWS	N/A
<i>Falco peregrinus anatum</i>	American peregrine falcon	DM	SE			(Nesting) near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures.	Nest consists of a scrape on a depression or ledge in an open site.	Moderate	FWS	N/A
<i>Geothlypis trichas sinuosa</i>	saltmarsh common yellowthroat	FSC		SC		Resident of the San Francisco Bay region, in fresh and salt water marshes.	Requires thick, continuous cover down to the water surface for foraging; tall grasses, tule patches, willows for nesting.	Moderate; occurrences noted at Laguna Salada and south (PWA et. al. 1992)	FWS	N/A
<i>Haematopus bachmani</i>	Black oystercatcher	FSC				Resident on rocky shores and islands along the Pacific Coast from the Aleutians to Baja California		Low	FWS	N/A
<i>Histrionicus histrionicus</i>	Harlequin duck	FSC				(Nesting) breeds on west slope of the sierra nevada, nesting along shores of swift, shallow rivers.	Nest often built in a recess, sheltered overhead by stream bank, rocks, woody debris, usually within 7 ft of water	Low	FWS	N/A
<i>Lanius ludovicianus</i>	Loggerhead shrike	FSC				(Nesting) broken woodlands, savannah, pinyon-juniper, Joshua tree, & riparian woodlands, desert oases, scrub & washes.	Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Low	FWS	N/A
<i>Limosa fedoa</i>	Marbled godwit	FSC				Common on west coast in winter, fairly common on Texas Gulf coast and in Florida; rare but regular in the east.		Moderate	FWS	N/A
<i>Melospiza melodia pusillula</i>	Alameda (South Bay) song sparrow	FSC				Resident of salt marshes bordering south arm of San Francisco Bay.	Inhabits salicornia marshes; nests low in grindedia bushes (high enough to escape high tides) and in salicornia.	Low	FWS	N/A
<i>Numenius americanus</i>	Long-billed curlew	FSC				(Nesting) breeds in upland shortgrass prairies & wet meadows in northeastern California.	Habitats on gravelly soils and gently rolling terrain are favored over others.	Moderate	FWS	N/A
<i>Numenius phaeopus</i>	Whimbrel	FSC				Breeds on arctic tundra, especially near coasts; coastal salt meadows, mudflats, and grassy shoreline slopes during migration.		Low	FWS	N/A
<i>Oceanodroma homochroa</i>	Ashy storm-petrel	FSC				(Rookery site) colonial nester on off-shore islands. Usually nests on driest part of islands. Forages over open ocean.	Nest sites on islands are in crevices beneath loosely piled rocks or driftwood, or in caves.	Low	FWS	N/A
<i>Pelecanus occidentalis californicus</i>	California Brown pelican	FE	SE			Forage over near shore marine areas including open coast, San Francisco Bay, and Rodeo lagoon. Utilize islands, rocks, cliffs, and some protected beach areas for roosting.		Low	FWS	N/A
<i>Phalacrocorax auritus</i>	double-crested cormorant			CSC		(ROOKERY SITE) COLONIAL NESTER ON COASTAL CLIFFS, OFFSHORE ISLANDS, & ALONG LAKE MARGINS IN THE INTERIOR OF THE STATE.	NESTS ALONG COAST ON SEQUESTERED ISLETS, USUALLY ON GROUND WITH SLOPING SURFACE, OR IN TALL TREES ALONG LAKE MARGINS.	Low	CNDDDB	N/A
<i>Riparia riparia</i>	bank swallow		ST			(NESTING) COLONIAL NESTER; NESTS PRIMARILY IN RIPARIAN AND OTHER LOWLAND HABITATS WEST OF THE DESERT.	REQUIRES VERTICAL BANKS/CLIFFS WITH FINE-TEXTURED/SANDY SOILS NEAR STREAMS, RIVERS, LAKES, OCEAN TO DIG NESTING HOLE.	Low	CNDDDB	N/A
<i>Rynchops niger</i>	Black skimmer	FSC				(Nesting colony) nests along the north & south ends of the Salton Sea; also, on salt pond dikes of south San Diego Bay.	Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs.	Low	FWS	N/A
<i>Selasphorus rufus</i>	Rufous hummingbird	FSC				(Nesting) breeds in transition life zone of northwest coastal area from Oregon border to southern Sonoma County.	Nests in berry tangles, shrubs, and conifers. Favors habitats rich in nectar-producing flowers.	Moderate	FWS	N/A
<i>Selasphorus sasin</i>	Allen's hummingbird	FSC				Mixed evergreen, riparian woodlands, eucalyptus and cypress groves, oak woodlands, and coastal scrub areas in breeding season.		Moderate	FWS	N/A
<i>Sterna elegans</i>	Elegant tern	FSC				(Nesting colony) only known breeding colony in U.S. located in the salt work dikes at the south end of San Diego Bay.	Nests on dikes between salt ponds in association with Caspian tern.	Low	FWS	N/A
Mammals										
<i>Neotoma fuscipes annectens</i>	San Francisco dusky-footed woodrat	FSC				Forest habitats of moderate canopy & moderate to dense understory. Also in chaparral habitats.	Constructs nests of shredded grass, leaves & other material. May be limited by availability of nest-building materials.	Moderate	FWS	N/A
<i>Nyctinomops macrotis</i>	big free-tailed bat			CSC		LOW-LYING ARID AREAS IN SOUTHERN CALIFORNIA.	NEED HIGH CLIFFS OR ROCKY OUTCROPS FOR ROOSTING SITES. FEEDS PRINCIPALLY ON LARGE MOTHS.	Low	CNDDDB	N/A
<i>Taxidea taxus</i>	American badger			CSC		MOST ABUNDANT IN DRIER OPEN STAGES OF MOST SHRUB, FOREST, AND HERBACEOUS HABITATS, WITH FRIABLE SOILS.	NEED SUFFICIENT FOOD, FRIABLE SOILS & OPEN, UNCULTIVATED GROUND. PREY ON BURROWING RODENTS. DIG BURROWS.	Moderate	CNDDDB	N/A

Status:
 FE = Federally-listed endangered
 FT = Federally-listed threatened
 DM = Federal recovered species; removed from endangered or threatened species list
 FSC = Federal species of concern
 SE = California state endangered
 ST = California state threatened
 SR = California state rare
 CSC = California Department of Fish and Game Species of Concern
 1B = CNPS plants considered to be rare, threatened, and endangered
 2 = CNPS plants rare of endangered in California, but more common elsewhere
 3 = CNPS plants for which more information is needed (watch list)
 4 = CNPS plant limited distribution (watch list)

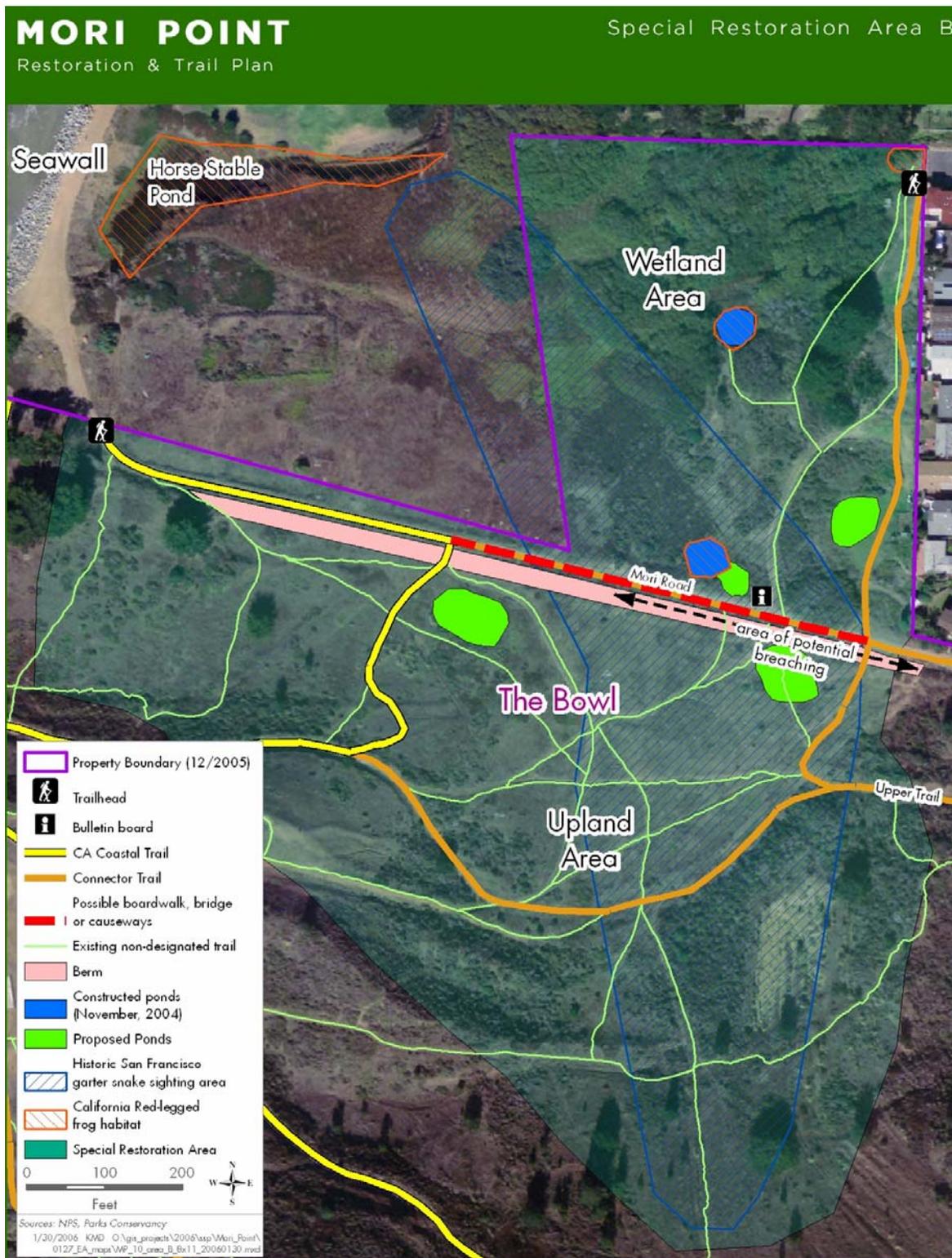
Exhibit 4: Environmental Assessment and FONSI

Appendix G. Special Status Species with Potential to Occur within the Mori Point Project Area

Scientific name	Common name	Status ¹				General habitat	Micro habitat	Potential to occur within Proposed Project Area	Source ²	Blooming period
		Federal	State	CDFG	CNPS					
FSLC = Federal species of local concern										

¹**Sources:**
 CDFG = California Natural Diversity Database, search for occurrences on the Montara Mountain USGS quadrangle and the surrounding quadrangles. Database search conducted December 2005.
 CNPS = On-line Electronic Inventory of Rare and Endangered Plants of California, 9-quad search for the Montara Mountain USGS quadrangle and search for List 4 plants within San Mateo County. Database search conducted December 2005.
 USFWS = Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Montara Mountain USGS 7.5 Minute Quad. Document Number: 051214041937. www.fws.gov/pacific/sacramento/es/spp_lists/auto_list.cfm (NOTE: Only species from the FWS search that occur in habitats similar to those observed on-site were included in this table).

Appendix H. Project Map for Public Scoping



**FINDING OF NO SIGNIFICANT IMPACT
MORI POINT RESTORATION AND TRAIL PLAN**

National Park Service, U.S. Department of the Interior
Golden Gate National Recreation Area

INTRODUCTION

This Finding of No Significant Impact (FONSI) has been prepared, in accordance with the National Environmental Protection Act (NEPA), for the Mori Point Restoration and Trail Plan, San Mateo County, California. Mori Point is a unit of the Golden Gate National Recreation Area (GGNRA). The FONSI, along with the EA and Errata Sheet, comprise the complete record of environmental impact analysis for the project.

This document describes the Selected Alternative and provides an explanation of why it will have no significant effects on the human environment. As stated in the Mori Point Restoration and Trail Plan Environmental Assessment (EA), the project will protect and enhance habitat for the federally endangered San Francisco garter snake and the federally threatened California red-legged frog; preserve and restore the ecological integrity of Mori Point habitats by reducing threats to native plant communities and natural processes; and develop a safe and sustainable trail system, incorporating the California Coastal Trail, that improves recreational experiences and reduces impacts to park resources.

PURPOSE AND NEED FOR ACTION

The purpose of the project is to protect, preserve, and enhance federally listed species habitat and the ecological integrity of Mori Point and develop a logical, safe, and sustainable trail system throughout Mori Point that would best provide for all visitor use, while preserving and restoring the ecological integrity of Mori Point habitats, native plant communities and natural processes.

Action is needed because Mori Point, as a recent addition to the GGNRA, is not specifically included in any GGNRA planning documents and there is no management direction to provide for resource protection and visitor use at the site. Previous land uses, which have caused severe erosion and altered hydrology, impact natural processes. The absence of a sustainable, designated trail system has left the area with a series of eroding trails that impact natural resources, resource protection, visitor safety, public access, and visual setting. Unless action is immediately taken, damage to resources would continue, increase, and worsen. Implementation of a well-defined trail system will guide visitor use away from disturbed areas, restoration areas, and potential endangered species habitat while enhancing recreational experiences at the site. Restoration actions will protect San Francisco garter snakes from trampling and predation, restore native California plant communities, increase the quantity and quality of endangered species habitat, improve hydrologic and habitat connectivity between upland and wetland areas, and reduce human-caused and accelerated erosion.

ALTERNATIVES

The EA analyzed three Action Alternatives and the No Action Alternative and their impacts on the human and natural environment. The following objectives guided their evaluation:

- Protect and enhance habitat for the federally endangered San Francisco garter snake and the federally threatened California red-legged frog.
- Restore native California plant communities including an appropriate mix of wetland, coastal grassland, and coastal scrub to support the threatened and endangered species at the site.
- Remove placed fills (non-native sand/gravel/rock, asphalt, cement, clay) as appropriate. Remove trash, debris, and illegal structures after assessing San Francisco garter snake habitat value. Replace structures with functional habitat equivalent as appropriate.
- Implement a comprehensive trail plan that would protect and enhance native habitats as well as provide safe visitor access.
- Install site improvements.
- Ensure access through site without compromising slope stability or sensitive habitat.
- Improve hydrologic and habitat connectivity between upland and wetland areas.
- Create ponds for San Francisco garter snake foraging habitat.
- Reduce human-caused and accelerated erosion to restore natural processes.
- Develop and implement a monitoring system to track progress for restoration goals.
- Engage community in the implementation of management objectives.
- Build public awareness on the appropriate use of the site, and protect habitat from unauthorized and/or destructive use.
- Build public awareness on the unique values and recreational opportunities at Mori Point.

Each of the three Action Alternatives contained the same restoration and trail alignment proposal due to the need to provide the highest level of protection for the federally listed species on the site. The resulting opportunities for trails left one system that best accommodated user circulation needs. Therefore, the alternatives differed only in trail-use designation. All trails were evaluated for suitability for uses over and above hiker-only.

The Preferred Alternative offers a variety of trail experiences to different user groups and meets management objectives to protect and enhance natural resource values and provide public access. Hiker-only designations would be in effect on all segments through, or leading to, steep and erosion-prone areas. Multiple-use opportunities (hiking, bicycling, and equestrian uses) were identified on the California Coastal Trail (CCT) and its main connector routes.

The second alternative (Limited Multiple-use) proposed that only Mori Road, the California Coastal Trail, and California Coastal Trail Connector be designated for multiple-use. All other trails would be hiker-only. The third alternative (All Multiple-use) designated all trails as multiple-use, with no restrictions on biking, hiking, or equestrian use.

The fourth alternative was the No Action alternative. Under this alternative, only the management practices that have been previously approved by the US Fish and Wildlife Service (USFWS) would continue. These include posting interpretive signs, constructing up to four

artificial ponds for San Francisco garter snake breeding habitat, removing small pampas grass plants, lopping pampas grass inflorescences (flower- or seed-heads) to reduce germination of new plants, pulling French broom plants in locations without rodent burrows, and conducting limited erosion control. Trails would remain non-designated and no trail removal, trail construction, or trail improvement would occur.

SELECTED ALTERNATIVE

The NPS selects Alternative 1 for implementation. Several minor changes were made as a result of public comments and agency review. These changes were made to the alternative as described in the EA and these modifications are detailed below. There are several components to the Selected Alternative: Site-wide Management Actions (which include restoration of three specific areas and trail alignment), Long-term Stewardship actions, and trail use designation.

Site-wide Management Actions

Action 1: Protect San Francisco garter snakes from trampling and predation.

This involves minimizing vehicular access to Mori Road, installation of enclosure fencing, and construction of a boardwalk, bridge, or raised road with causeways to accommodate snake and frog movement. This action will also protect California red-legged frogs from predation from bullfrogs (*Rana catesbeiana*) by guarding against their establishment at Mori Point, and working with U.S. Fish and Wildlife Service to determine a plan for controlling them, if they become established. Feral cats that prey on small mammals, birds, and reptiles at Mori Point would be captured live and taken to nearby humane societies.

Action 2: Restore native California plant communities including an appropriate mix of wetland, coastal grassland, and coastal scrub to support the threatened and endangered species at the site.

An appropriate mix of wetland, riparian, and open grassland, and coastal scrub habitats will be created to support the threatened and endangered species at the site. Non-native plant and tree species would be removed and the area restored.

Action 3: Remove placed fills and remove trash, debris, and illegal structures after assessing San Francisco garter snake habitat value. Replace structures with functional habitat equivalent as appropriate.

Fill and structures would be removed if deemed necessary to the aesthetic and ecological integrity of the site and if removal would not impact sensitive species. Sites would be rehabilitated and revegetated as needed.

Action 4: Implement a comprehensive trail plan that would protect and enhance native habitats as well as provide safe visitor access.

The implementation of a comprehensive trail plan would minimize vehicular, pedestrian, bicycle, equestrian, and dog traffic in the most sensitive San Francisco garter snake habitats, while enhancing the visitor experience. An upgraded trail system would supply a variety of loop trails leading to popular destination points. Resource protection would be primarily achieved through

methods such as fencing, signage, trail markers, re-vegetation, turnpikes, and/or boardwalk to ensure smooth flow and protect the sensitive habitats at the site.

Action 5. Installation of additional site improvements.

Possible site improvements may include, but are not limited to, the following: public safety, regulatory, interpretive, and wayfinding signage; accessible site furnishings (e.g. benches and picnic tables); accessible toilets; vault or other method; bicycle racks; trailhead improvements such as kiosks, waysides, or landscaping improvements; parking improvements and definition/designation of parking spaces; and limited fencing for safety or to protect sensitive habitat.

Action 6. Restoration of three specific areas.

Special Restoration Area A: Ensure access through Special Restoration Area A without compromising slope stability or sensitive habitat. A study would be conducted in association with the final trail design to outline the main drainage pathways and contributing drainage areas to determine treatment for water pooling along trails under existing and proposed project conditions. Recommendations would likely involve smoothing the trail, adding a permeable top surface, and de-watering the trail by installing drains and other devices.

Special Restoration Area B: Improve hydrologic and habitat connectivity between upland and wetland areas and create ponds for San Francisco garter snake foraging habitat. A human-constructed berm running parallel to the road that separates upland and wetland habitats will be removed in phases to create habitat and hydrologic connectivity. This water will either flow directly into the lower wetland area or be diverted into another constructed pond. A raised, drivable boardwalk or bridge along this section of road will allow for safe movement of the San Francisco garter snake and other small animals under the structure. The berm on the south side of the road will also be breached in the vicinity of the boardwalk/bridge, allowing water to flow under it, providing for a drier and more aesthetically pleasing path for visitors to walk to the seawall and adjacent trails. This boardwalk/bridge will begin near the eastern edge of the West Fairway Park housing development and end near the western end of the newly constructed pond. It would remain drivable to allow for emergency and other maintenance-related vehicle access.

Additional seasonal ponds would be created in up to five locations both north and south of Mori Road or near Sanchez Creek. The ponds may be maintained by periodically removing sediment or by creating an upstream sediment detention basin. Sediment removal would be restricted to late summer or fall periods when the San Francisco garter snake is not using the ponds.

Special Restoration Area C: Reduce human-caused and accelerated erosion to restore natural processes. In Area C, to reduce human-caused and accelerated erosion above the Bluff Trail, the grade would be recontoured beginning at the ridge top and continuing down the western slope within the gully areas. All topsoil from the recontoured site would be recovered and placed on scarified sites to restore original natural contours. All debris encountered during excavation would be removed from the site. Check dams would be installed in gullies over two feet in depth to erase hydrologic memory. Soil from the fill site areas would be placed in the gullies and compacted. All finished contours of grade exceeding 15 percent would be stabilized by covering

with erosion matting or certified weed free rice straw and securely fixed in place. Once natural contours and drainage patterns have been established, the site may be revegetated in order to further stabilize the soil.

Long-term Stewardship Actions

Action 1: Maintain trails.

The GGNRA would conduct regular maintenance of the new and restored trail segments, including trimming of trailside vegetation, replacement of trail base material, and possible localized soil disturbance (such as to repair erosional features or construct water bars). Maintenance activities would also include the monitoring, repair, and/or replacement of attendant features such as fencing, signs, trail markers, turnpikes, and boardwalks.

Action 2: Continue to restore native plant communities.

The GGNRA plans to continue active restoration within selected portions of the project area; restoration actions would be conducted as described under Site-wide Management Actions.

Action 3: Develop and implement a monitoring system to track progress for restoration goals.

Photo-monitoring would be conducted on a site-wide and project-specific level as necessary. Periodic invasive plant species surveys will track their expansion and/or decline. Monitoring and survey work for the California red-legged frog and the San Francisco garter snake will also be conducted.

Action 4: Engage the community in the implementation of management objectives.

Community members would be invited to participate in the implementation of appropriate management activities through active outreach, education, and stewardship efforts. Volunteer programs and educational partnerships would be broadened, and regular opportunities for community participation would be offered at the site. The GGNRA would continue to cultivate relationships and coordinate its management efforts with adjacent landowners, local non-profits, other agencies and local community members.

Action 5: Build public awareness on the appropriate use of the site, and protect habitat from unauthorized and/or destructive use.

The GGNRA would make efforts to educate visitors on the appropriate use of the site, particularly in endangered species habitat, using those education activities described in Action 6, below. The GGNRA would integrate local community support in education and enforcement efforts. Educational signage and protective fencing may also be used to protect sensitive areas from disturbance.

Action 6: Build public awareness on the unique values and recreational opportunities at Mori Point.

To build public awareness, the GGNRA and/or its partners would offer educational walks and related programs on both the cultural and natural resources found at Mori Point. In addition, outreach and education materials would be developed and the existing on-site bulletin board would be maintained and updated regularly. Regular volunteer workdays would be offered for

community members interested in hands-on learning and experiences. The GGNRA would also partner with other organizations to assist with public education efforts. To the extent that resources become available, educational efforts would extend into the schools through presentations and on-site field trips. Opportunities to engage the media would also be pursued.

Trail Alignment

The northernmost entryway to Mori Point will be Fairway Drive. The Fairway Trail will run south, paralleling the backyard fences, to connect with Mori Road. The existing access trail, which begins just south of the Fairway Drive entrance and connects to Mori Road near the bulletin board will be decompacted and revegetated in order to reduce habitat fragmentation. The Fairway Drive entrance will lead into the heart of Mori Point, the intersection of the wetland habitats, and the upland “Bowl” area, at which point several trail options exist.

At the north-westernmost park entrance from the sea wall, visitors will have a choice of two California Coastal Trail (CCT) segments, each providing a north-south passage through Mori Point. The CCT Coastal Connector climbs up the coastline and approximately follows the route of the informal paths that already parallel the coast, but will be improved with the (possible?) addition of stairs. This trail will connect with the remainder of the north-south CCT near the undesignated trail leading to Mori Point proper where an overlook will be established. Another less strenuous trail will begin at the intersection of the sea wall and Mori Road. Visitors may follow Mori Road inland and then ascend gradually on the CCT Bowl Connector toward the south, largely along an existing road that would be narrowed to appropriate trail width. The CCT Bowl Connector will switchback to the west via an improved existing trail where it would intersect with the Bluff Trail, the Peak Trail, and the Point Trail. The CCT would continue southeast along an improved existing trail through a stand of intact coastal scrub just north of Mori peak. Upon reaching Mori Ridge, the CCT would descend southward onto private land.

From the east, visitors may access the site through two entrances: at the junction of Mori Road close to Highway 1 or through the gate at Mori Road. The easiest route and one of the most popular, to the center of Mori Point is along Mori Road. Conversely, the trailhead closer to Highway 1 leads to the Upper Trail, which parallels Mori Road and offers a more natural experience and an alternate route to access the western part of the site. Visitors can remain on fairly level ground by using the Upper Trail, a narrower and improved version of the already extant roadway, heading west towards the Bowl (a sensitive wildlife area). Upon reaching the Bowl, one can turn north along an improved existing trail (Bowl Trail) to reach Mori Road, or turn south along the Bowl Trail, a contour trail that skirts the perimeter of Mori’s most sensitive upland habitat to connect to the CCT Bowl Connector. The Bowl Trail is comprised of improved existing trail and new trail that follows the Bowl’s natural topography. A raised, drivable short boardwalk or bridge may be constructed along this section of Mori Road. The boardwalk/bridge would begin near the eastern edge of the West Fairway Park housing development and end just west of the newly constructed pond on Mori Road.

Alternatively, a more challenging and scenic route from the easternmost part of the park exists by way of a series of stairs running up to the Crest Trail where an improved existing trail will follow

the ridgeline directly west to intersect with the CCT. At this intersection, one can turn north or south on the CCT, or follow the Peak Trail to climb to the summit of Mori's highest vantage point. From the summit, the Peak Trail continues downslope to connect with the Bluff and other trails. The northern intersection of the Peak Trail and the CCT is the gateway to two of Mori Point's most popular destinations - the coastal bluffs and Mori Point proper. (Note: Trail names are temporary and for planning purposes only.)

Accessibility

All trails were evaluated for opportunities to comply with Architectural Barrier Act Accessibility Standards (ABAAS) and the proposed accessibility guidelines for Outdoor Developed Areas as published in the final report of the Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas. Alterations of existing trail alignments at Mori Point are severely constrained by steep terrain, extremely large boulders, and threatened and endangered species habitat and other critical cultural-natural resource protection needs. New trails segments which are constructed, as well as repairs to or rehabilitation of existing trails, where feasible will meet outdoor accessibility guidelines.

Trail Use Designation

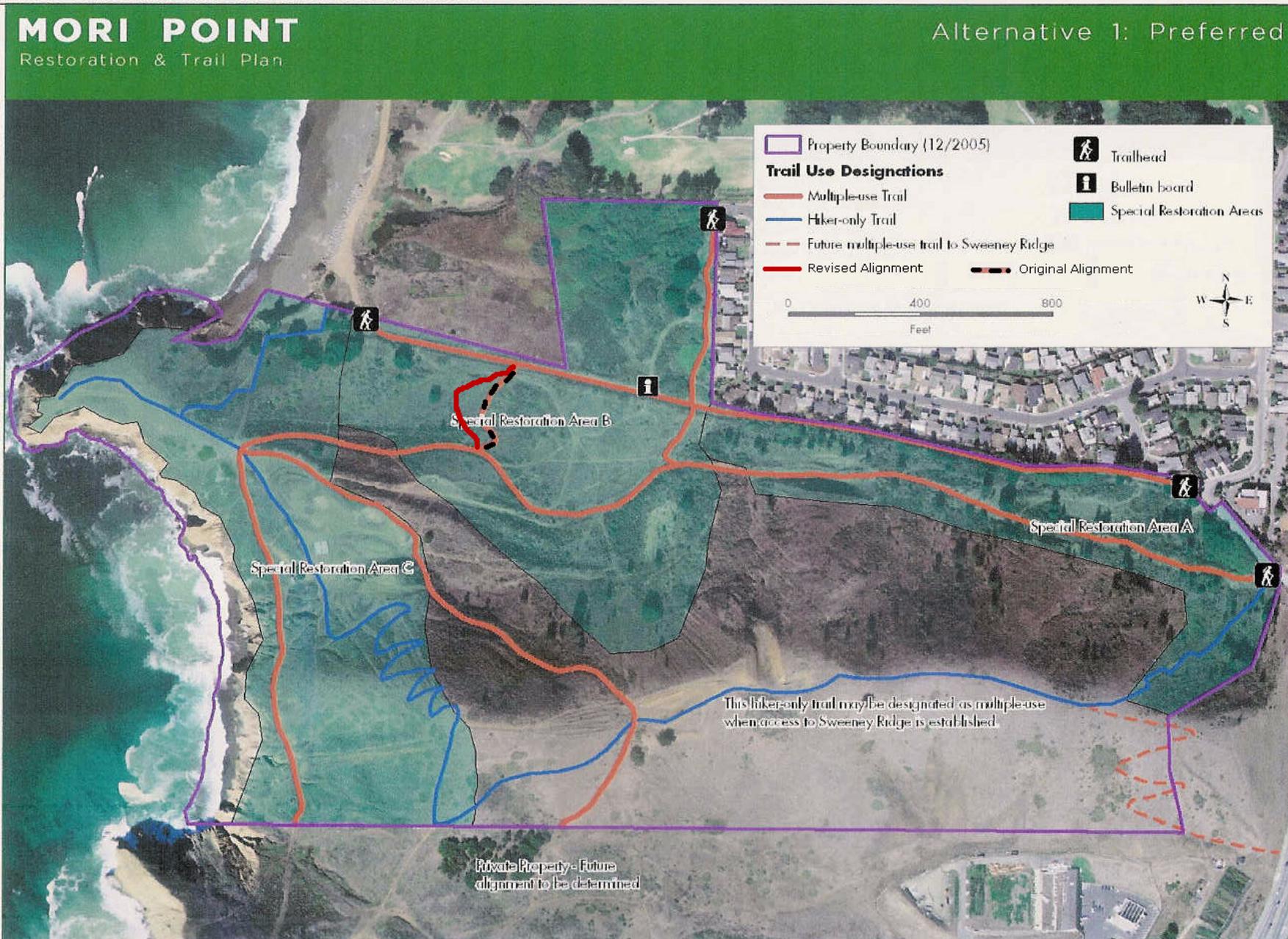
In the Selected Alternative, 1.26 miles of hiker-only trail would be in effect on all segments through, or leading to, steep and erosive areas. This includes the Crest Connector Trail, CCT Coastal Connector, Point Trail, Peak Trail, and Crest Trail. A total of 2.26 miles of multiple-use trails would include the California Coastal Trail and its main connector routes: Mori Road, the CCT Bowl Connector, the Bowl Trail, Upper Trail, Fairway Trail, and the unimproved Bluff Trail.

Modifications to the Selected Alternative

Due to some slope failure that occurred during the winter 2006 storms, a portion of the hiker-only CCT segment as it ascends from the seawall and intersects Mori Point has been rerouted around the slumped area. This change is minor and would not be discernable on a trail map. Other similar small changes to the trail alignment may be needed, due to winter weather conditions and erosion.

In addition, the multi-use segment of the CCT as it leaves Mori Road was changed slightly due to the steepness of the slope; the trail will turn to reduce the grade. Detail will be determined upon final design. These changes do not create new or additional impacts to those evaluated in the EA. A revised trail map, noting this minor change, is depicted on the following page.

FIGURE 3. ALTERNATIVE 1: PREFERRED ALTERNATIVE.



ENVIRONMENTALLY PREFERRED ALTERNATIVE

The National Park Service (NPS) has determined that the environmentally preferred alternative for this project is Alternative 1, the Preferred Alternative. The environmentally preferred alternative is the alternative that will promote the national environmental policy expressed in NEPA (sec. 101 (b)). This includes alternatives that:

- Fulfill the responsibilities of each generation as a trustee of the environment for succeeding generations.
- Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
- Preserve important historic, cultural, and natural aspects of our national heritage and maintain, whenever possible, an environment that supports diversity and variety of individual choice.
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The Council on Environmental Quality Regulations (CEQ) regulations implementing NEPA and the NPS NEPA guidelines require that “the alternative or alternatives which were considered to be environmentally preferable” be identified (Council on Environmental Quality Regulations, Section 1505.2). Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources.

The Selected Alternative meets all of the NEPA criteria and would have the greatest benefits to natural and visitor resources at the site. The project includes habitat restoration and protection for federally listed species, improving hydrologic and habitat connectivity, long-term stewardship actions while creating safe and sustainable access of the site for visitors.

PUBLIC INVOLVEMENT

Public scoping was conducted between October 7, 2005 and November 7, 2005. GGNRA received and considered comments after that date. The project was reviewed by interdisciplinary staff of the Golden Gate National Recreation Area (GGNRA) at an internal Project Review meeting on November 30, 2005 and July 26, 2006 and by the GGNRA Historic Assessment Group on March 29, 2006.

On October 6, 2005, a notice announcing the beginning of public scoping for the project was mailed to more than 1,500 individuals, agencies, and organizations, the Fairway West neighborhood and nearby residents, Golden Gate National Park Conservancy's Site Stewardship Program mailing list, and the Parkwide GGNRA mailing list. The notice was posted on the bulletin board at Mori Point. Press releases were sent out to area newspapers which resulted in one article

in the Pacifica Tribune on October 12, 2005. A public open house was conducted in at the Pacifica Community Center, Pacifica, CA on October 25, 2005 and the project team hosted an Informational Walk at the project site on October 29, 2005. Seventeen people signed in at the public meetings, though approximately 30 individuals attended. Fourteen people attended the public field trip. Thirty-seven individuals provided a total of 134 comments. Comments were submitted in writing at public meetings and via email, mail, and through the PEPC website. The GGNRA considered all public comments.

Scoping comments were diverse and focused on communication and coordination issues, trail alignment, dogs, trail design, natural resource issues, interpretation of the area, and installation of site amenities. Comments asked that the NPS coordinate with bicyclists, the Pacifica City Council, GGNRA Liaison committee, City and County Law Enforcement, and the USFWS, The Peebles Corporation, and San Francisco Department of Recreation and Parks. There were many comments regarding trail alignment and use. As a result, the trail alignment presented during scoping was redesigned to incorporate the public comments.

Public comment also advocated for unpaved trails that would provide accessible and safe hiking; be open to multi use and some hiker only, on and off-leash dog walking, cycling, and horseback riding; and include a single-track loop for cycling. Some favored more signs and fences; others wanted these items to be kept to a minimum. The public requested that the NPS remove unsightly concrete debris and structures as well as the drainage pipe and concrete footings on beach. Some noted that protection of wildlife and habitat restoration should be a top priority; others felt that Mori Point should emphasize recreation rather than restoration. Use of recreational vehicles was discouraged. Other natural resource comments related to NPS control of bullfrogs and feral cats, minimal herbicide use, removal of invasive plants and reintroduction of native plants, and cautioned that the NPS not compromise slope stability on Mori Road. Public comment both supported and did not support construction of additional ponds for habitat. The importance of mosquito control was also noted. It was requested that the NPS provide trash cans and picnic tables; other comments discouraged picnic tables. Comments also encouraged good interpretation of the site. All scoping comments were considered in the development of the EA.

The EA was available for public review and comment from February 23 through March 31, 2006. Public notice of the availability of the EA was provided to individuals, organizations, and agencies through notification on the park website (<http://parkplanning.nps.gov/goga>), mailing of the EA (29), and a postcard/email notice (1,920). The EA was sent to four local libraries: San Francisco Civic Center, Pacifica, Millbrae, and San Mateo. The EA was discussed at a GGNRA Park Public Meeting on February 28, 2006. An article inviting public comment appeared in the Pacifica Tribune on March 8, 2006. The NPS received 42 comments on the project from individuals, the GGNRA [Pacifica] Liaison Committee, Responsible Organized Mountain Pedalers (ROMP), Coastwalk, and the California Coastal Conservancy.

Comments on the EA focused on alternatives, resource protection and restoration, the trail plan and implementation, outreach and education, and other site uses. The majority of comments (78%) noted preference for a particular trail use designation. Comments supported protection of sensitive habitat, provided comments on trail construction, and questioned the extent of tree

removal. One letter noted that further evaluation of paragliding was needed before dismissing it as an alternative. A change to the text was made to address this issue (see Errata). One letter was received from the State Clearinghouse, which stated that no state agencies submitted comments on the project. Other summarized comments and NPS responses are provided in the Errata.

AGENCY CONSULTATION

U.S. Army Corps of Engineers

Pursuant to Section 404 of the Clean Water Act (33U.S.C. 1344), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material to Waters of the U.S., including wetlands. On February 7, 2006, GGNRA sent the USACE the wetland delineation to determine if there are any jurisdictional wetlands that may be affected by proposed project activities resulting in the “fill” of Waters of the U.S. After site visits with the USACE, the NPS submitted revised delineation, maps, and data points on June 7, 2006. The NPS received a map confirming USACE jurisdiction on June 22, 2006. On July 31, 2006 the NPS sent the USACE a Pre-Construction Notification and request to proceed under Nationwide Permit 27 (NWP), Street Restoration Activities. The NPS received a letter of concurrence and approval to proceed under NWP 27 on August 25, 2006 [File Number 300875S].

San Francisco Bay Regional Water Quality Control Board

The Regional Water Quality Control Board (RWQCB) is responsible for taking certification actions for activities subject to any permit issued by the USACE pursuant to Section 404. On March 17, 2006, the NPS applied for a Water Quality Certification for the project. A Conditional Water Quality Certification was issued on June 12, 2006. [File No. 2178.07 (HTK)].

U.S. Fish and Wildlife Service

Under Section 7 of the federal Endangered Species Act as amended, PL 93-205, 87 Stat. 884, 16 USC §1531 et seq., federal agencies are required to consult with the USFWS if their actions, including permit approvals, could adversely affect an endangered or threatened species, or its critical habitat. The GGNRA conducted informal consultation with USFWS by conducting meetings to discuss the project on September 13, 2005 and September 28, 2005, and through ongoing and regular correspondence between USFWS staff and GGNRA natural resource staff. The NPS initiated formal consultation on the Restoration and Trail Plan on February 24, 2006 with submittal of the EA, which also served as a Biological Assessment. The USFWS issued a Biological Opinion, which included an Incidental Take Statement, on July 13, 2006 [File #: 1-1-06-F-1575]. Reasonable and Prudent Measures as stated in the BO are included in the Mitigation Table in Appendix A.

California Coastal Commission

GGNRA sent a letter to the California Coastal Commission on December 19, 2005 requesting a Negative Determination for the project, in accordance with the Coastal Zone Management Act of 1972, as amended, Section 307c(1). On March 9, 2006, the NPS received a letter from the Coastal Commission stating concurrence with the negative determination that the proposed project will not adversely affect coastal zone resources [ND-117-05].

Advisory Council on Historic Preservation and California State Historic Preservation Officer

The National Historic Preservation Act of 1966, as amended PL 89-665, 80 Stat. 915, 16 USC §470 et seq. and 36 CFR 18, 60, 61, 63, 68, 79, 800, requires federal agencies to consult with the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO) regarding undertakings that may affect properties listed in or eligible for listing in the National Register of Historic Places. In 1992, Golden Gate National Recreation Area entered into a Programmatic Agreement with the ACHP and the SHPO which allows park staff from the GGNRA Preservation Assessment Group to review undertakings for National Historic Preservation Act conformance as long as such undertakings are found to have No Effect or No Adverse Effect on properties listed in or eligible for listing in the National Register of Historic Places. The Selected Alternative was reviewed and certified by the Preservation Assessment Group on March 29, 2006. The review resulted in one project stipulation to consult with Park Archeologist on any work to be carried out in the archeological sensitivity zone well in advance of such work taking place. This condition was added as mitigation for the project.

WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE QUALITY OF THE HUMAN ENVIRONMENT

The NPS used the following NEPA criteria and factors defined in 40 CFR §1508.27 to evaluate whether the Selected Alternative would have a significant impact on the environment.

Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts that require analysis in an EIS.

Whether taken individually or as a whole, the impacts of the project do not reach the level of significance. Many of the adverse impacts would be temporary and occur during construction. Other adverse impacts would be both short and long term; direct, indirect, and cumulative; and negligible to minor impacts. These adverse impacts would occur to geology and soils, hydrology and water quality, wildlife, vegetation, wetlands, recreation and visitor use, soundscape, and visual resources. Adverse impacts to federally listed species on site (San Francisco garter snake and California red-legged frog) will be short and long term, direct and indirect, and minor to major. However, with implementation of mitigation measures and Best Management Practices outlined in the EA, these adverse impacts would be less than significant. The USFWS Biological Opinion for the project stated that the selected alternative “is not likely to jeopardize the continued existence of either of these species.” There will be no adverse impacts to cultural resources and only temporary negligible impacts to air quality as a result of construction.

The Selected Alternative would also have long-term, minor to major beneficial effects on the human environment. Revegetation, trail construction/removal/improvements, erosion repairs, berm removal, and boardwalk/bridge construction will provide long term beneficial impacts to geology and soils. Restoration of surface water channels and wetlands would benefit water quality and hydrology. Site-wide Management Actions would result in long-term direct beneficial impacts to wildlife, vegetation, and wetlands. Locally the project would produce a net increase of over 13.3 acres of native plant habitat resulting from 4.1 acres of non-designated trail removal, 5.0 acres of erosion repair, 3.3 acres of soil decompaction and planting, and 0.8 acres of debris and fill removal. Up to five ponds (0.4 acres) would be created for listed species habitat.

The project has many long-term beneficial impacts: improved trail and site conditions, access to popular destination points on safe trails, a balanced experience for all users, and improved aesthetics. Long-term benefits will result from improved hydrologic connections between wetlands, uplands, and ponds. This connectivity would help to stabilize aquatic resources that have historically been fragmented. This would result in an approximate 5:1 mitigation ratio of restored to impacted habitat for permanent impacts. Long-term Stewardship Actions, such as invasive species removal, will occur throughout the site, thereby improving habitat quality of all 110 acres. Benefits to cultural resources will be obtained from the interpretation of indigenous, historic, and recent uses of Mori Point. The Selected Alternative would benefit Public Safety as well, as trail would be constructed to NPS trail standards, signed to promote safe use, and the removal of non-designated trails, stabilization of erosion areas, and removal of debris would reduce overall potential hazards to visitors.

Degree of effect on Public Health or Safety.

Adverse impacts on Public Health and Safety would be negligible. Public health and safety issues were related to mosquito control from pond creation/expansion and visitor safety during construction. Coordination with the San Mateo County Mosquito Abatement District (SMCMAD) indicated that the contribution of the small frog ponds would be minor compared to the overall production of mosquitoes from the Laguna Salada, Horse Stable Pond, and creek/wetland complex. However, as per recommendation from the SMCMAD, GGNRA would monitor mosquito populations and apply *Bacillus thuringensis* if needed. Application of this biological control agent would mitigate this issue. Overall, the Selected Alternative will promote safe trail use, stabilize dangerous eroded areas, and reduce potential hazards to visitors.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

The project area consists of public open space that lies between the Pacific Ocean and Interstate Highway 1 to the west and east, respectively. The Sharp Park Golf and Laguna Salada wetlands are to the north; private property and wetlands are located to the south. Despite previous and disturbance at the site, Mori Point contains wetland habitat for the San Francisco garter snake and the California red-legged frog, two federally listed species. At maximum, the temporary construction impacts in wetlands would be approximately 0.60 acres; permanent impacts would total 0.05 acres. There will be no loss of wetlands. Consultation has occurred with appropriate regulatory agencies and work will be completed in compliance with all permitting requirements. Any discharge into the special aquatic sites (wetlands) is expected to be de-minimus. The project area is not in proximity to historic/cultural resources, prime farm lands or wild and scenic rivers.

Degree to which effects on the quality of the human environment are likely to be highly controversial.

The project effects on the quality of the human environment are not highly controversial but some members of the public may show disfavor for the selected trail use designation. Both comments from scoping and on the EA were supportive of the overall plan; however, preferences for trail use designation among each interest group varied. The project will provide opportunities

for all user groups to enjoy the site while still preserving sensitive habitat areas. The plan presents a balance of the public comments. No use is excluded, and there are ample opportunities for bicyclists, hikers, and equestrians to enjoy Mori Point. Some public comments noted a preference that (on or off-leash) dog walking be permitted at the site. This topic was not included in the scope of this EA; it will be addressed in the GGNRA Dog Management Plan and Negotiated Rulemaking that is currently underway in a separate planning process.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.

The potential impacts are well defined and analyzed in the Mori Point Restoration and Trail Plan EA. The degree or possibility that the effects on the human environment will be highly uncertain or will involve unique or unknown risks is remote.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The Selected Alternative will not predetermine or establish a precedent for future actions with significant effects at Mori Point and does not represent a decision in principle about a future consideration. Future actions and decisions at Mori Point not identified in this EA will be reviewed in an independent NEPA analysis.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

The EA considered the cumulative impacts of the Selected Alternative with several past, present and ongoing future projects. The analysis for all impact topics indicated that the Selected Alternative could result in minimal but not collectively significant cumulative effects.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The GGNRA thoroughly investigated cultural resources as part of the environmental analysis. This information and archaeological surveys of the Mori Point Area of Potential Effect resulted in the identification of many modern features, mainly associated with quarrying operations at the Point within the last 60 years. These properties are considered historically insignificant and ineligible for listing on the National Register of Historic Places (NRHP). No historic or prehistoric sites were found that would be impacted by the Mori Point project.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat.

Several listed species could occur at Mori Point, but in the July 13, 2006 Biological Opinion, the USFWS determined that the project is likely to adversely affect only two species: the endangered San Francisco garter snake and threatened California red-legged frog. USFWS found either lack of sufficient habitat or insufficient evidence of the other species in the project area. After reviewing the current status and environmental baseline for the San Francisco garter snake and California red-legged frog, cumulative effects on the species, and effects of the proposed project,

the USFWS determined that the Selected Alternative is not likely to jeopardize the continued existence of either species. Critical habitat has been designated for the California red-legged frog, but is not located in the action area. Critical habitat for the San Francisco garter snake has not been proposed or designated; therefore none will be affected by the proposed project. The Biological Opinion contains numerous measures to address the short and long-term minor to major adverse impacts to the species. These measures, together with the mitigation and Best Management Practices listed in the EA will ensure impacts to the species remain less-than-significant.

Whether the action threatens a violation of Federal, state, or local environmental protection law

Implementing the Selected Alternative would violate no federal, state or local environmental protection laws. Assessment of the proposed action has been performed pursuant to the National Environmental Policy Act, which requires consideration of environmental protection laws and regulations.

IMPAIRMENT

In addition to reviewing the list of significance criteria, the National Park Service has determined that implementation of the Selected Alternative and mitigation measures will not constitute an impairment to GGNRA's resources and values. There would be no major adverse impacts to a resource or value whose conservation is 1) necessary to fulfill specific purposes identified in the park's establishing legislation; 2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or 3) identified as a goal in the park's general management plan or other relevant NPS planning documents. This conclusion is based on a thorough analysis of the environmental impacts described in Mori Point Restoration and Trail Plan Environmental Assessment, the mitigation measures, agency consultations, considerations of the public comments received, relevant scientific studies, and the professional judgment of the decision-maker guided by the direction in NPS Management Policies 2001.

MITIGATION MEASURES

Mitigation measures are included as a key component of the Selected Alternative and will be completed by the NPS/GGNRA, Golden Gate National Parks Conservancy, and its contractors and volunteers. Mitigations are listed below. Reasonable and Prudent Measures were provided by the USFWS as a result of consultation. These items were not identified in the EA but added to the mitigation table on the following page.

Mori Point Restoration and Trail Plan Mitigation Measures	Responsible Party
GEOLOGY AND SOILS	
GGNRA would prohibit construction activities in any site area with seismic hazards until geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development/restoration plans.	NPS Project Manager
HYDROLOGY AND WATER QUALITY	
*Construction will be limited to the dry-weather months.	NPS Project Manager
Appropriate design would drain surface water from the trail to avoid ponding and development of soft, muddy surfaces that can lead to soil degradation and water quality impacts.	NPS Project Manager
Erosion and sediment control measures would be implemented where project actions could leave soils exposed to runoff prior to revegetation. Erosion control measures would be installed wherever necessary during construction to eliminate the potential for sediment discharge into stormwater, wetlands, and creeks.	NPS Project Manager
*Stockpiles and disturbed soils will be properly covered with appropriate erosion and sedimentation control measures to minimize impacts to water quality.	NPS Project Managers, Golden Gate National Parks Conservancy (GGNPC) Project Managers, Contractors
*Heavy equipment shall be kept outside of wetlands and environmentally sensitive areas to avoid impacts to waters of the State and degradation of habitat value	
Areas disturbed by equipment or vehicles will be rehabilitated as quickly as possible to prevent erosion, discourage the spread of nonnative plants and address soil compaction.	
*All debris and construction wastes shall be kept outside the wetlands and other waters of the State and properly disposed of to an offsite facility.	
*Upon completion of the project, the NPS will restore and revegetate the work area and all disturbed soils adjacent to the project site to their natural pre-construction conditions. Only local native plants will be used in revegetation.	
VISITOR SAFETY	
As per recommendation from the San Mateo County Mosquito Abatement District, monitoring of mosquito populations will be implemented and <i>Bacillus thuringensis</i> would be applied if needed.	NPS & GGNPC Project Managers, NPS aquatic biologist
Advanced notification of construction work, detour signage, and construction fencing will be implemented to restrict visitors from hazardous areas during construction.	NPS & GGNPC Project Managers
VISITOR USE AND RECREATION	
Hours of construction using heavy equipment will be limited and restricted between the hours of 8:00 p.m. until 7:00 a.m. and would not	NPS & GGNPC

<p>occur on weekends. Trails will be detoured during construction.</p>	<p>Project Managers</p>
<p>NOISE</p>	
<p>Use of powered construction equipment will comply with the City of Pacifica Municipal Code, Sec. 5-10.03. Enumerated, which prohibits construction noise at night from 8:00 p.m. until 7:00 a.m. Neighbors would also be given notice prior to any construction activities.</p>	<p>NPS & GGNPC Project Managers, Contractors</p>
<p>Equipment and trucks used for construction should utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, and installation of sound blanket around the project site, wherever feasible and necessary). Construction vehicles should be properly maintained and equipped with exhaust mufflers that meet state standards.</p>	
<p>Impact tools used for construction should be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust should be used. External jackets on the tools themselves and quieter procedures should be used wherever feasible.</p>	
<p>Construction vehicles and equipment will not idle when not in use.</p>	
<p>CULTURAL RESOURCES</p>	
<p>The project team will consult with the GGNRA archaeologist well in advance of any work that will be conducted in archaeologically sensitive areas. If archaeological materials are recovered, project monies must fund preservation, cataloguing, storage, equipment, and materials needed.</p>	<p>NPS & GGNPC Project Managers, NPS Archaeologist, Contractors</p>
<p>BIOLOGICAL RESOURCES</p>	
<p>All vehicles will be brought in cleaned and free of weeds to prevent the spread and/or introduction of invasive plant species.</p>	<p>NPS & GGNPC Project Managers, Contractors</p>
<p>Soils and vegetation contaminated with weed seeds would be segregated and disposed of or treated as appropriate.</p>	
<p>At the discretion of a qualified biologist, restrictions will be placed on the movement or deposition of fill, rock, or other materials containing weed seed or viable plant cuttings to areas relatively free of weeds.</p>	
<p>No earthmoving work shall occur in the vicinity of the “Bowl”, existing ponds or wetlands between November 15 and April 15, the breeding season for California red-legged frogs and the season when San Francisco garter snakes are inactive in their winter burrows.</p>	
<p>Vegetation in all construction areas will be progressively cut to a height that would allow for a visual search of the snake and checked for presence of snakes prior to ground-disturbance and construction equipment or vehicles entering the sites. Once vegetation is cleared, a pre-construction survey for the San Francisco garter snake will be conducted in the impact area.</p>	
<p>Prior to construction near wetlands or ponds, exclusion fencing will be constructed. All rodent burrows in constructions areas where soil or fill will be removed or placed, will be hand excavated until the burrows terminates or until a maximum depth of 30 centimeters. Exclusion fencing gates will be closely monitored throughout construction to ensure no snakes enter the area..</p>	
<p>Speed limits of 10 miles per hour will be posted on all access roads.</p>	

<p>A qualified biologist will inspect for snakes and frogs underneath any vehicle that is parked for 30 minutes or more, immediately prior to moving the vehicle.</p>	<p>NPS & GGNPC Project Managers, Contractors & Volunteers</p>
<p>Personnel who detect any suspected San Francisco garter snake or California red-legged frog on-site will immediately report their finding to a qualified biologist for positive identification. Non-permitted personnel will not attempt to capture or move any snake or frog detected. If the qualified biologist determines that the animal is not a San Francisco garter snake or California red-legged frog, the qualified biologist may hand capture and move the animal to suitable habitat outside the construction area. If the qualified biologist determines that the detected animal is a San Francisco garter snake or a California red-legged frog, or is unable to positively identify the animal, then the qualified biologist will notify the permitted biologist for appropriate action.</p>	
<p>A biologist holding a valid Scientific Collection Permit from the U.S. Fish and Wildlife Service will be on-site or on call to handle any San Francisco garter snakes or California red-legged frogs encountered during pre-construction and construction activities. Only a holder of a valid Scientific Collection Permit from the USFWS will handle San Francisco garter snakes. California red-legged frogs will only be handled by a holder of a valid Scientific Collection Permit from the USFWS or a USFWS-approved biologist.</p>	<p>Contractor</p>
<p>All excavated holes and trenches will be either covered at the end of the workday, ramped or escape boards will be placed in trench to allow any animals to escape. Trenches will be inspected each morning and late afternoon by a qualified biologist as well as before the trench is filled.</p>	<p>NPS & GGNPC Project Managers, Contractors</p>
<p>Invasive non-native plant removal involving ground disturbance would be conducted as follows so that any San Francisco garter snakes that may be hiding in vegetation can escape unharmed. First, search each clump or patch thoroughly for snakes. If a San Francisco garter snake is found, disturbing it is likely to make it hide more deeply in the vegetation, therefore, leave the clump or patch alone and check it again on a later day. If no San Francisco garter snake or California red-legged frog is found, vegetation will be progressively cut and searched to 1 to 2 feet above ground level. If no San Francisco garter snake is found, the remainder of the clump or patch can be removed. Prior to removal of vegetation, the site will be surveyed for underground burrows. In those areas where no burrows are found, the plant may be removed by hand using a weed-wrench or other digging tool.</p>	
<p>Wetlands will be monitored for invasive aquatic species and removal will be conducted when needed.</p>	<p>NPS & GGNPC Project Managers, NPS biologist, Contractors</p>
<p>If vegetation-removal work is anticipated during the bird-nesting season, vegetation shall be removed to a height of less than 8 inches prior to the nesting season (March 1st through July 31st) and maintained at height less than 8 inches throughout project activities to discourage nesting. If work is necessary during the nesting season, a qualified biologist must conduct a pre-project survey for nesting birds and determine that birds are not nesting within the project area. All pre-project surveys would be conducted by qualified individuals and coordinated with the GGNRA wildlife ecologist. If nests are found, appropriate buffers (where construction work could not occur) would be established around nest sites. Buffers would be maintained until birds fledged and young birds were mobile enough to move out of the area, or nests failed. Buffer size would be determined based on species and nest site characteristics and proposed construction actions in coordination with the ggnra wildlife ecologist.</p>	
<p>In order to protect nesting raptors, trees shall not be removed between January 1st and July 31st unless qualified personnel conduct a pre-project survey for nesting birds and determine that birds are not nesting within the project area. If nesting raptors are detected, a qualified biologist will delineate a suitable buffer.</p>	<p>NPS & GGNPC Project Managers</p>

<p>Prior to implementation of proposed project activities, conduct visual surveys within the Monterey pine and cypress groves on-site to determine the presence or absence of woodrat nests. If woodrat nests are located during this survey, avoid the nest(s) and establish a 25-50 foot buffer around each nest, depending on the characteristics of the site. Project activities requiring grading, mechanized equipment or vehicles, or large crews within the protective buffer should only occur during the non-breeding season (October-November) to avoid noise impacts to any breeding woodrats that may occupy the nest from December through September. If project activities cannot avoid impacting or removing the nest, then the nest(s) should be dismantled by hand prior to grading or vegetation removal activities. The nest dismantling shall occur during the non-breeding season (October-November) and shall be conducted so that the nest material is removed starting on the side where most impacts will occur and ending on the side where the most habitat will be undisturbed, which will allow for any woodrats in the nest to escape into adjacent undisturbed habitat. If young are encountered during nest dismantling, the dismantling activity should be stopped and the material replaced back on the nest and the nest should be left alone and rechecked in 2-3 weeks to see if the young are out of the nest or capable of being out on their own (as determined by a qualified biologist); once the young can fend for themselves, the nest dismantling can continue.</p>	<p>NPS & GGNPC Project Managers</p>
<p>Prior to implementation of proposed project activities, conduct visual surveys on-site to determine the presence or absence of suitably sized burrows for badgers. If potential badger burrows are located on-site, surveys will be conducted at each burrow to determine the presence or absence of badgers. If badgers are determined to be present, a qualified biologist will be consulted to determine appropriate buffer distances from each occupied burrow to maintain during project activities, and possible project timing restrictions to avoid impacts to birthing individuals (most young are born in March and April¹). If avoidance of impacts to occupied burrows is not feasible, then a qualified biologist shall implement a pre-construction program during the non-birthing season (Summer through Winter) to exclude badgers from their burrows by closing each burrow once the badger has emerged.</p>	<p>NPS & GGNPC Project Managers</p>
<p>*Reasonable and Prudent Measure, as specified in the USFWS Biological Opinion, to minimize the impact of the proposed actions on the San Francisco garter snake and the CA red-legged frog: <u>Minimize the effect of incidental take on the San Francisco garter snake and California red-legged frog from construction, restoration, and visitor use activities.</u> To implement this measure, the NPS will:</p> <ul style="list-style-type: none"> • The GGNRA shall ensure the implementation of their Proposed Conservation Measures (listed previously and as described in great detail in the EA) and the Terms and Conditions of this biological opinion. An education program for field personnel involved with the Mori Point Restoration and Trail Plan shall be conducted prior to initiation of field activities. The program shall consist of a brief presentation by person(s) knowledgeable in the California red-legged frog and San Francisco garter snake. The program shall include the following: a description of these species, their ecology, and habitat needs; an explanation of their legal status and their protection under the Act; and an explanation of the measures being taken to avoid or reduce effects to these species during implementation of the proposed project. The education may be conducted in the field. • To minimize the potential for mortality of San Francisco garter snakes, the areas near wetlands and ponds shall be trapped-out and fenced to the maximum extent possible when heavy equipment is used. Future contracts for San Francisco garter snake surveys, including trapping and biological monitoring, will only be awarded to persons who have a valid 10(a)(1)(A) permit. All 	<p>NPS & GGNPC Project Managers</p>

¹ Long 1973 (Long, C. A. 1973. Taxidea taxus. Mammal. Species. No. 26. 4pp.) from "California's Wildlife, Mammals, Badger. California Wildlife Habitat Relationships System, California Department of Fish and Game, 1983."

<p>snake trapping, marking, and holding will be in conformance with the existing permit, as well as additional protective measures described in this opinion.</p> <ul style="list-style-type: none"> • Unless a head start captive breeding program to enhance juvenile survivorship is in place at a Service-approved facility, all captured San Francisco garter snakes and California red-legged frogs will be released promptly outside of the enclosure areas, unless release would cause the individual to be injured or killed—in which cases the individual will be released as close to the point of capture as possible, but away from the construction area. If a head start program has been established for the San Francisco garter snake, any gravid female snakes will be transported according to the protocol established in conjunction with the program. • Trained personnel will walk the route to and from each restoration area ahead of heavy-equipment and trucks, to be sure that the area is clear of San Francisco garter snakes prior to heavy equipment on site. Staff and volunteers with GGNRA and the GGNPC will be trained on the identification and avoidance of both the San Francisco garter snake and the California red-legged frog. • GGNRA shall work with the Service to plan and initiate a visitor-use survey to assess the effectiveness of the new trail system in reducing off-trail impacts to habitats and implement protective measures as needed. 	
<p>*Reasonable and Prudent Measure, as specified in the USFWS Biological Opinion, to minimize the impact of the proposed actions on the San Francisco garter snake and the CA red-legged frog: <u>Minimize use of herbicides in the vicinity of Sanchez Creek and created wetland habitats.</u> To implement this measure, the NPS will:</p> <ul style="list-style-type: none"> • No herbicide foliar spraying or direct stump applications will be allowed in riparian or wetland containing the habitat of the San Francisco garter snake or the California red-legged frog except during the dry season. Areas with riparian or wetland vegetation may be treated in the dry season, provided that the ground is found to be dry at the time of application and that the site is manually checked for presence of both of these two listed species before application. This term does not apply to the painting of stems and trunks or wick application to leaves at least two feet above ground with an NPS-approved herbicide. 	<p>NPS & GGNPC Project Managers</p>
<p>*Reasonable and Prudent Measure, as specified in the USFWS Biological Opinion, to minimize the impact of the proposed actions on the San Francisco garter snake and the CA red-legged frog: <u>Protect wetlands at Mori Point and Laguna Salada from disease, pathogens, and exotic species.</u> To implement this measure, the NPS will:</p> <ul style="list-style-type: none"> • The NPS will comply with current sterilization protocols, for all wetland sampling and monitoring at Mori Point, to protect against chytrid and trematode infestation. • The NPS will monitor for bullfrogs and warm-water fishes in Sanchez Creek and wetlands at Mori Point. All bullfrog egg masses detected will be removed and the occurrences reported to the Service’s Sacramento Field Office 	<p>NPS & GGNPC Project Managers</p>
<p>*Reasonable and Prudent Measure, as specified in the USFWS Biological Opinion, to minimize the impact of the proposed actions on the San Francisco garter snake and the CA red-legged frog: <u>Monitor and minimize unlawful activities at Mori Point.</u> To implement this measure:</p> <ul style="list-style-type: none"> • The NPS will work with the local residents and law enforcement to reduce vandalism, illegal dumping, and camping. 	<p>NPS & GGNPC Project Managers</p>

CONCLUSION

Implementation of the Selected Alternative for the Mori Point Restoration and Trail Plan will not have significant impacts on the human environment. The determination is sustained by the analysis in the EA, agency consultations, the inclusion and consideration of public review, and the capability of mitigations to reduce or avoid impacts. Adverse environmental impacts that could occur are negligible to major in intensity, duration, and context and less-than-significant. As described in the EA, there are no highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence. There are no previous, planned, or implemented actions, which in combination with the selected alternative would have significant effects on the human environment. Requirements of the National Environmental Policy Act have been satisfied and preparation of an Environmental Impact Statement is not required. The GGNRA will implement the Selected Alternative as soon as practical.

Recommended:

Brian O'Neill
 for Brian O'Neill, Superintendent

9-19-06

Date

Golden Gate National Recreation Area, National Park Service

Approved:

Jonathan B. Jarvis
 for Jonathan B. Jarvis, Regional Director
 Pacific West Region, National Park Service

9/29/06

Date